COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

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Coal's Place in Current Business

PUBLICATION has been begun by Secretary Hoover of a Survey of Current Business, compiled by the bureaus of Census, Foreign and Domestic Commerce and Standards. In announcing the first issue Mr. Hoover says that the figures included represent in a large measure "those data which the Secretary and executives of the Department find necessary to have at hand for their own use" and that publication involves but little additional expense. Examination of this interesting report which in 55 pages covers every thing from banking and finance to automobile tires, shows what a variety of data on business are already available and how intelligent co-ordination of facts can assist the business executive.

Just as each operator watches the relative costs at two of his mines, just as he last year kept an eye on the relative car supply afforded his and his neighbors' mines, and as now he inspects the comparative figures of running time of his and neighboring districts and his and adjacent mines, so the coal industry, through the new service of the Secretary of Commerce, can set coal alongside other industries. To the coal industry many facts set forth in this survey of current business are of unusual interest.

Everything is reduced to index numbers which means that intelligent comparison can be made between such unrelated items as bituminous coal production and business failures. Using the average monthly production in 1913 as 100, the index figure on production of bituminous coal in June is 85, of anthracite 105.

Compare this with 79 (in March, the latest figure) for the total revenue freight carried by railroads, with 68 for exports of cotton, 72 for production of wheat flour, 58 in March for production of condensed milk, 89 for cigars, 42 for pig iron production, 40 for steel ingot production, 19 for copper, 62 for zinc, 55 for actual production of knit underwear, 76 for production of news print paper, and 81 for sole leather manufactured. Indeed, one has to look to such commodities as automobile tires, 323, and crude petroleum, 202, to find branches of business that, compared with 1913 are doing as well or better than coal.

Standardization an Aid in Merchandising

EFFORTS looking to the setting up of standards of quality and grade of coal are meeting with a gratifying response. The largest undertaking in this direction, that of classifying the coals going to Atlantic tidewater points was the product of a war necessity but it has proved the value and importance to the trade of definite standards. So great is the variety of coals, particularly in the East, that but very few consumers are qualified or prepared to wisely select the one coal that is best suited to their needs, and more specifically, to designate the particular mine that produces that coal. Arbitrary standards are necessary because Nature put the coal in the ground with no greater regard for uniformity than is found in the linaments of the human face. Certain broad generalizations are possible—the Mongolian and the Caucasian; the bituminous and the lignite—but within each general class are to be found a profusion of minor gradations.

Dr. Ashley, the veteran student of coal, is working on the problem from the standpoint of the scientist. Nearly two years ago he submitted to the American Institute of Mining Engineers a proposed general and theoretical classification of all coal as it occurs in the ground. As a result of the discussion provoked by this presentation, Dr. Ashley has revised and simplified his classification to the form shown on another page of this issue of *Coal Age*. He invites further criticism.

As contrasted with this scientific grouping of coals according to their inherent components and properties, are the classifications emanating from the trade itself; classifications that either group mines in accordance with the character of run of mine coal, as the war time tidewater pools, or that draw arbitrary lines through the gamut of possibilities and set up specific groups having definite properties and of given quality. Of the latter the new classifications of the Sewall's Point Exchange covering mines in the Smokeless field on the Virginian Railway in southern West Virginia is the best example. Breaking away from the policy of the other tidewater exchanges that still define pools as containing the coal from a given list of mines but without defining the limits of quality of coal from those mines, this new system defines and guarantees the analysis of coal in each pool without attempting to specify the mines supplying that coal. Recognition is given the fact that the consumer is first of all interested in the coal and not in its source.

Full advantage is taken of this factor by Wilbur A. Marshall of New York in the development and use of what he terms the "Shallmar" coal classification. This classification consists of the grouping under some 80 heads, the high, medium and low volatile coals tributary to the northern Atlantic seaboard with reference to use, preparation, and ash and sulphur content. The "Shallmar" coal classification is not scientific, its chief claim to interest from that standpoint is that it is probably the first published attempt to apply the Dewey Decimal system to the description of coal. But as an aid to merchandising coal it has great possibilities, and it is for that purpose that it was designed and is used. Operating in the present highly competitive market and in a territory where the only standards aside from private brands are the undefined tidewater classifications, there is a field for what may be described as "simplified spelling" in coal nomenclature. Instead of mystifying the uninformed buyer of coal with a jargon of technical terminology, Mr. Marshall, as it were, puts his wares out on the shelf in plain sight and plainly

marked. The consumer who knows what he wants can look over the stock and order accordingly and for the user who is not informed on the proper coal for his plant, the salesman has at hand a key from which to make a recommendation and selection. As a practical, easily workable system, it is obviously simpler to determine on and to specify "154" from the "Shallmar" classification, than "Hivol A ZXZ" from Dr. Ashley's layout, although the more complicated formula is the more definite.

Everyone is familiar with the standard advertisment of "Mobiloil"—an elaborate table listing every recognized make and model of automobile and truck and showing in concise and understandable form the proper grade of this oil to use in each car at each season of the year. So widespread and persistent has been the publication of this advertisement that the motorist has come to think of oil as "Mobiloil" as he thinks of gasoline as fuel. He has been taught by the unremitting publicity given this table that there are different grades of oil and that he must select the right oil for his car—and the selection of the right oil is made easy if he specifies "Mobiloil." This is making standardization an aid to merchandising. The "Shallmar" coal classification has possibilities of the same sort ahead of it; the final result will depend on how intensively and intelligently it is kept before the coal buyer.

Ineffectiveness of Timber Cribs

MOST imposing of roof supports is a crib of timber, and most inexorably does the roof dispose of its pretensions. Mathematical calculation does the same as soon as it is employed. A crib made up of 8-in. timbers 6 ft. long uses only the four corners, which measure only 8 x 8 in. Thus the timber which bears the weight is only 22.2 per cent of the whole timber employed. With a chock using timbers of the same length but only 6 in. square the efficiency falls to 16.7 per cent.

This conclusion, however, is not based on all the factors. Timber is so much more resistant to pressure along the grain than to pressure across it that when loaded on end it will bear three to five times as much stress as when loaded across the grain. The ratio with dried post oak is 3.5 and consequently the two efficiency ratios studied above will fall to 6.34 and 4.76 per cent respectively.

Of course, when the design is to make the chock permanent the holding power may be slightly increased by filling the heart and the space between the timbers with rock. This adds something to the strength and gives a permanent value to the crib, the timbering in reality serving only to keep the rock in place until the weight has pinned it so tightly that it cannot move. The rock adds but little to the strength of the chock on first squeezing, for the corners which primarily hold up the roof will be utterly crushed out of place by the time the sides of the chock get into effective operation, and both corners and sides will be in bad condition, crushed almost beyond further resistance, before the heart of the cog takes up its part in supporting the roof, unless indeed the cog sinks into the bottom as is possible where it is soft.

Timber posts, therefore, are much more efficient than cogs when used for temporary support, and there will be no true substitute for the prop as a temporary underpinning for the rock until the chock is replaced by something better. A solid wood crib would be within the bounds of reason from an economical point of view where the use was purely temporary and concentration of support desirable, but the unfortunate feature of timber so set is that when the weight comes on it it cannot be removed even if originally set on slack, for it is too deep and wide to be readily undermined and thus extracted.

For temporary supports we may come therefore to can be placed in position by water pressure and withdrawn by releasing the water, being moved from place steel posts or to some form of hydraulic device which to place by the use of a winch and a jack post.

Why Waste Dumps Burn

ONE of the mysteries of the mines is why waste dumps burn. The average roof rock looks entirely incapable of starting into flame and yet when the pile gets on fire it is almost impossible to extinguish it. It seems to subsist on nothing.

Less astonishment will be felt, however, when consideration is given to the oil in bituminous shales. In certain parts of the country these shales are extremely rich in oil. Thus Ashley and Fettke discovered a cannel shale above a cannel coal at the plant of the Wister Coal Corporation at Cannelton, in Beaver County, Pennsylvania, that gave 44.2 gallons or 1.05 barrels of oil per short ton. At two other points nearby the shale was not so rich, running only 15.6 and 33.2 barrels respectively.

It is quite usual to find figures like these last two for shales labelled bituminous cannel. Bituminous shale is not so rich or it would be given another name. On the other hand, it is, of course, more common. The same authors found a carbonaceous shale which was destitute of oil in the upper Devonian measures, but all the bituminous shales tested gave between 1.3 and 44.2 gallons per ton and not a few showed over a quarter of a barrel. The lower figure is for a bed at the mines of the Morris Run Coal Co., Morris Run, in Tioga County, Pennsylvania, a section of the state where the oil has been driven out of both coal and shale. Another low figure, 1.9 gallons, was found for a bituminous cannel shale at Sterling No. 2 Mine, the reason being the same as for the low yield of oil from Morris Run shale.

Around those parts of the coal field where the volatile content of the coal is high, greater yields of oil are obtained. A bituminous shale on Purnam Run, in Washington County, despite weathering still showed 12.4 gallons of oil per ton.

A company bringing to the dump 150 tons of rock a day will have stored at the end of the year about 30,000 tons of this waste material, which at even an eighth of a barrel of oil per ton will equal 4,000 barrels. What wonder that such a dump will burn? The thermal value of that amount of oil would be, roughly, equal to that of 1,000 tons of coal.

Of course, it would refuse to burn on a grate where it would be spread in a thin layer, but when in a big body it is able to use nearly all the heat it generates to maintain its combustion and to drive off what moisture it contains. What starts the burning is not so easily determined, but the fact that the rock in many, if not most, instances is dumped on rank vegetation may have something to do with it, though most of the conflagrations of mine dumps can be traced to fires started on the outside.

KATHLEEN MINE, OF THE UNION COLLIERY CO., ONE OF THE MOST MODERN PLANTS IN SOUTHERN ILLINOIS

Bad Fire at Kathleen Mine Is Rapidly Extinguished

Circuit Breaker, Which Does Not Break When Top Coal Falls On Piece of Unbonded Track Bringing Wire with It, Is Apparent Cause of Accident — Exceptional Fire Seal Hastens Recovery

BY EUGENE MCAULIFFE*
St. Louis, Mo.

ON FEB. 23, 1921, the Union Colliery Co., in operating its Kathleen mine, located at Dowell, Jackson County, Ill., experienced a rather disastrous mine fire. As usual, many unwarranted statements as to the origin of the fire were circulated. The explosion of a 150-kw. transformer, the presence of a supply of lubricating oil on the main entry and an accumulation of gas, each in turn was advanced as the cause of the fire.

As every transformer underground was placed in service without repairs when the mine was opened, as no oil was stored or used on the main entry, and as it was impossible for an accumulation of gas to gather in an air-swept haulageway, the hastily-concocted theories as to the cause of the fire were set aside by the mine officials and state inspectors, who were conversant with the operation and its condition. The actual history of the accident and the subsequent recovery of the mine, which may prove of value to others, is substantially as follows:

About 11:50 a.m. on Feb. 23, 1921, the mine engineer and his assistant were making some measurements in the third and fourth north headings turned off the main west haulage entries, these latter consisting of three parallel passages. Leaving the faces of the third and fourth headings where seven men were employed, they proceeded outbye against the air and noticed signs of smoke at a point about 1,900 ft. from the airshaft. Thinking that possibly the trace of smoke came from an overheated cutting-machine cable they hurried to the end of the main entry where a gang was at work cutting and loading coal.

Failing to locate the trouble at this point the engineer and his assistant started toward the airshaft on the center or main haulage entry and encountered dense smoke about 150 ft. from the point where the main entry intersected the third and fourth north and south entries. Hastily returning to the machine gang the engineer, accompanied by his helper and three miners, ran back, going with the air toward where the seven men were working, but were blocked by a dense accumulation of smoke when within about 200 ft. of the fourth north entry. The engineer and his party turned and again ran west against the air and, crossing over to the intake or left-hand entry, they started toward the mine bottom. They found the fire breaking through a wood and fiber-plaster stopping at a point about 150 ft. south of the intersection of the main haulage entry with the third south entry.

An alarm was promptly given and a fire-fighting force was quickly organized. Orders were issued to withdraw from the mine all men other than those composing the fire-fighting force. Simultaneously calls for

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help were made on the state rescue team located at Duquoin, five miles distant. Likewise the neighboring mines were urged to send assistance in the form of apparatus and skilled men.

The first relief force, consisting of the Duquoin mine-rescue team composed of six men equipped with breathing apparatus, reached the mine after about three and one-half hours. In the meantime vigorous efforts were made to extinguish the fire with the aid of chemical extinguishers, scattering assistance coming from every quarter. All the employees were accounted for except the seven men who had been working at the face of the third and fourth north entries.

After every effort to control the fire and reach the seven imprisoned men was exhausted it was decided at 12:30 a.m., Feb. 24, thirteen hours after the fire was discovered, that the only hope of gaining mastery over it lay in sealing both shafts. This work was completed at 5:30 a.m., Feb. 24.

The territory occupied by the seven men, comprising a machine gang and two track layers, consisted of two entries each about 600 ft. long, two panel entries turned from them for a distance of less than 100 ft. and a parting driven in about 70 ft. from the third north entry. With the hope that the men might be able to brattice themselves off for a period at least, a geophone was obtained and used for some days, but without result.

Carbon Monoxide Came from Rescue Borehole

In the meantime a 6-in. borehole was driven to the parting previously referred to. This hole entered the parting at 8:05 p.m., March 1. A discharge of carbon-monoxide gas under a pressure of 2 or 3 oz. per square foot ended all hope for the rescue of the imprisoned men. As showing the accuracy of both the underground and surface surveys and in support of the conclusions made as to the probable whereabouts of the seven men it should be here mentioned that the borehole entered the parting exactly as anticipated and when the mine was explored the bodies of the men were found about 20 ft. inbye from its point of entry.

Immediately after the shafts were sealed a standard "U" type of water gage was installed in the seal above both shafts. On March 1, which was six days after the shaft had been sealed, the outside temperature stood at 65 deg. F. A self-recording thermometer located at a point about 4 ft. below the top of the airshaft seal registered 62 deg. F. A comparison of temperatures and the variation in water-gage pressures shown in the accompanying table evidences the general trend of fire exhaustion.

The Kathleen mine is a new property, located on the east slope of what is known as the Duquoin anticlinal. The coal bed rises at a grade approximating an average of 5.5 per cent from the shafts toward the west property line. No marked variation in elevation between the north and south developments has so far been experienced. East of the shaft local disturbances which temporarily give off an appreciable amount of methane (CH_4) have been encountered and gas is exhaled from the working places, as is usual in this coal area. Nothing, however, of an extraordinary character has been met with in the development of the property. Top coal is left up for roof, as is customary in the southern Illinois coal field. This is a condition that lends itself readily to the rapid spread of entry fires.

Enter Mine Three Weeks After Fire Starts

Desiring to recover as quickly as possible the bodies of the men still underground, early consideration was given to the opening of the mine. Although rather extraordinary statements were made as to the rapid spread of the fire, the high temperature encountered in fighting it, and the like, it was decided, after careful study, that the mine could be successfully entered by March 18, or twenty-two days after the shafts were sealed.

Preparatory to this opening five state mine-rescue teams, equipped with oxygen breathing apparatus, each team consisting of six trained men, were furnished through their respective captains with a map showing the underground development, the location of the fire and the probable location of the bodies of the seven victims. An airtight lock was constructed over the airshaft, its general dimensions being as follows: Chamber over shaft, 9 ft. 4 in. wide, 9 ft. 4 in. long, 30 ft. high.

Immediately north of this chamber and separated from it by an airtight door an air lock 21 ft. 5 in. long, 6 ft. 3 in. wide and 6 ft. 9 in. high was constructed. This was provided with an exterior airtight door, affording ingress and egress. The inner door was located 5 ft. 2 in. from the shaft curb, the distance between the inner and outer doors being 15 ft. 3 in., which was sufficient to accommodate a timber car loaded with the 12-ft. lumber used for temporary stoppings.

The framework of this temporary construction was of 3 x 4-in. material, the sheeting consisting of 1 x 8-in. shiplap laid double with one thickness of building paper between. The top was covered with one thickness of byrkett lath made airtight with a thick coating of wood-fiber plaster. Two ordinary house windows were inserted in the wall for lighting purposes. An accom-

TABLE I. COMPARISON OF INSIDE AND OUTSIDE TEMPERATURES WITH VARIATIONS IN WATER GAGE

1921	Weather	Outside Temp. Hour	Outside Temp. Deg. F.	Inside Temp. Hour	Inside Temp. Deg. F.	Max. Range Hour	Max. Range Plus Inches	Water Gage Hour	Water Gage Minus Inches
Feb. 26	Fair, clear	.....	..	.....	..	3 p.m.	0.1	10 a.m.	0.0
Feb. 27	Fair, clear	.....	..	.....	..	2 p.m.	0.0	3 p.m.	0.1
Feb. 28	Fair, clear	.....	..	.....	..	.....	0.0	.....	0.0
Mar. 1	Fair, clear	3 p.m.	65	3 p.m.	62	.....	0.0	.....	0.0
Mar. 2	Cloudy	.....	..	.....	..	.....	...	.....	0.1
Mar. 3	Fair, cool	.....	..	.....	..	10 a.m.	0.0	1 a.m.	0.1
Mar. 4	Fair, cool	2 p.m.	69	2 p.m.	60	10 a.m.	0.0	1 a.m.	0.1
Mar. 5	Fair, windy	1 p.m.	70	1 p.m.	66	5 p.m.	0.2	10 p.m.	0.1
Mar. 6	Rain	12 noon	68	11 a.m.	64	10 a.m.	0.2	8 a.m.	0.1
Mar. 7	Rain and fog	2 p.m.	64	2 p.m.	58	4 p.m.	0.1	8 a.m.	0.1
Mar. 8	Rain	3 p.m.	68	3 p.m.	65	.....	...	8 a.m.	0.1
Mar. 9	Clear and fair	2 p.m.	54	2 p.m.	56	4 p.m.	0.1	10 a.m.	0.1
Mar. 10	Bright and warm	3 p.m.	64	3 p.m.	59	.....	0.0	.....	0.0
Mar. 11	Bright and warm	12 noon	64	12 noon	60	4 p.m.	0.1	8 p.m.	0.1
Mar. 12	Rain a.m., sunny p.m	1 p.m.	70	1 p.m.	68	2 a.m.	0.1	8 a.m.	0.1
Mar. 13	Warm and sunny	4 p.m.	74	4 p.m.	72	.....	0.0	8 a.m.	0.1
Mar. 14	Rain a.m., sunny p.m	4 p.m.	76	4 p.m.	72	2 a.m.	0.1	.....	0.0
Mar. 15	Bright and warm	3 p.m.	82	3 p.m.	70	4 p.m.	0.1	6 p.m.	0.1
Mar. 16	Cool and clear	3 p.m.	66	3 p.m.	60	12 noon	0.0	1 a.m.	0.1
Mar. 17	Bright and warm	11 a.m.	70	11 a.m.	58	10 a.m.	0.0	2 p.m.	0.1
Mar. 18	Clear and windy	11 a.m.	76	1 p.m.	59	12 noon	0.0	10 a.m.	0.1

TABLE II.—ANALYSIS OF AIR IN KATHLEEN MINE, DOWELL, ILLINOIS, SUBSEQUENT TO FIRE OF FEB. 23, 1921

Shafts sealed at 5 a.m., Feb. 24, 1921, air-shaft opened March. 16, 1921

Date Sampled	From	Analysis Made At	Carbon Dioxide (CO_2)	Oxygen (O_2)	Methane (CH_4)	Carbon Monoxide (CO)	Nitrogen (N_2)	Total
Mar. 1*	Airshaft seal	Urbana	4.6	8.3	4.3	0.5	82.3	100.0
Mar. 1†	Drill hole	Urbana	7.4	3.1	4.4	0.3	84.8	100.0
Mar. 11*	Airshaft seal	Urbana	4.4	3.9	6.8	0.3	84.6	100.0
Mar. 11†	Drill hole	Urbana	5.0	2.1	7.9	0.3	84.7	100.0
Mar. 17*	Airshaft seal	Urbana	4.4	2.4	8.8	—0.5	83.9	100.0
Mar. 17*	Airshaft seal	Urbana	4.2	2.5	8.3	—0.5	84.5	100.0
Mar. 17	Airshaft bottom	Urbana	4.0	3.2	8.8	0.2	83.8	100.0
Mar. 17	Airshaft bottom	Car No. 6	4.0	3.2	8.1	.....	Not taken	.....
Mar. 17†	Drill hole	Urbana	4.5	1.8	10.4	—0.5	82.6	100.0
Mar. 18	Airshaft bottom	Car No. 6	3.6	4.8	12.0	.....	Not taken	.....
Mar. 19	Airshaft bottom	Car No. 6	3.6	6.0	12.6	.....	Not taken	.....
Mar. 19	Airshaft bottom	Urbana	3.4	4.4	8.0	0.2	84.0	100.0
Mar. 19†	Drill hole	Car No. 6	4.4	3.2	12.8	.....	Not taken	.....
Mar. 20	450 ft. North of shaft	Car No. 6	3.8	3.6	13.5	.....	Not taken	.....
Mar. 22	1,000 ft. Northwest of shaft	Car No. 6	4.0	3.6	13.5	.....	Not taken	.....
Mar. 23	1,000 ft. Northwest of shaft	Car No. 6	3.8	4.6	12.9	.....	Not taken	.....
Mar. 24	Northwest entry near first south	Car No. 6	4.3	2.2	15.6	.....	Not taken	.....
Mar. 24	First south off main west	Car No. 6	4.0	1.8	15.0	.....	Not taken	.....
Mar. 24	Northwest aircourse near third south	Car No. 6	3.6	4.0	10.2	.....	Not taken	.....
Mar. 24	Northwest haulage near third south	Urbana	3.6	4.0	10.2	0.1	83.1	100.0

* Taken from pipe extending about four ft. below seal.

† Taken from top of pipe in borehole driven to parting at end of fourth north entry about 600 ft. from where fire started.

Analyses shown as made at Urbana were made by the laboratory of the U. S. Bureau of Mines at Urbana, Ill.; those shown as made by Car No. 6 were made by the engineer in charge of the U. S. Bureau of Mines. Car No. 6, using portable apparatus.

panying illustration shows the general external appearance of the lock.

To forestall any possible failure to raise the cage in the event that a disarrangement of the power line supplying the electric hoist should cut off the supply of energy while the helmet men were below, a steam hoist, a steel line and sinking tub were fitted up, thus making quick emergency egress possible. In this connection it should be stated that the concrete shaft lining and the solid concrete and paving-brick construction employed in the fan house and in the air ducts made it readily possible to provide a thoroughly airtight seal. Beyond doubt this was an important factor in the early reopening of the mine.

After the lock was completed and the restoration forces were thoroughly organized, the airshaft seal was lifted on March 17. An oxygen breathing-apparatus team entered the mine on the following day, March 18, using the cage to descend to the mine bottom 231 ft. from the surface. The mine was found to be clear of smoke and the temperature to be 60 deg. F. The work of establishing a fresh-air base at the shaft bottom was then begun.

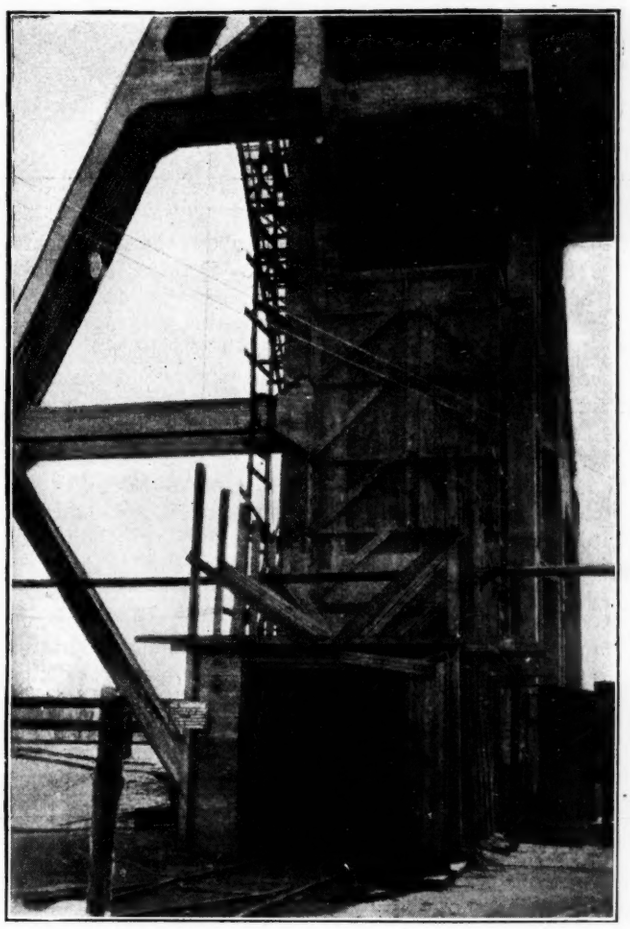
Fan, Steam-Driven, Made to Exhaust Slowly

To this end five seals were quickly constructed of byrkett lath and wood-fiber plaster, and after a brick stopping had been removed the fan was started exhausting and driven as slowly as possible by means of its auxiliary steam drive. Thus pure air soon displaced the gaseous mixture at the bottom of the shaft. The analysis of air samples taken at various points is set forth in Table II.

Steady shrinkage in oxygen content from 8.3 per cent on March 1 to 2.5 per cent on March 17 proved the effectiveness of the two shaft seals as well as that of those applied to the fan chamber. To consume the oxygen within the mine would require the burning of about 50 tons of coal, for the total volume of the void within the mine resulting from the extraction of coal and top material approximated 700,000 cu.yd. The increase in methane (CH_4) content from 4.3 per cent on March 1 to 16 per cent on March 24 was noticeable, suggesting an appreciable explosive hazard deserving the closest attention during the recovery period.

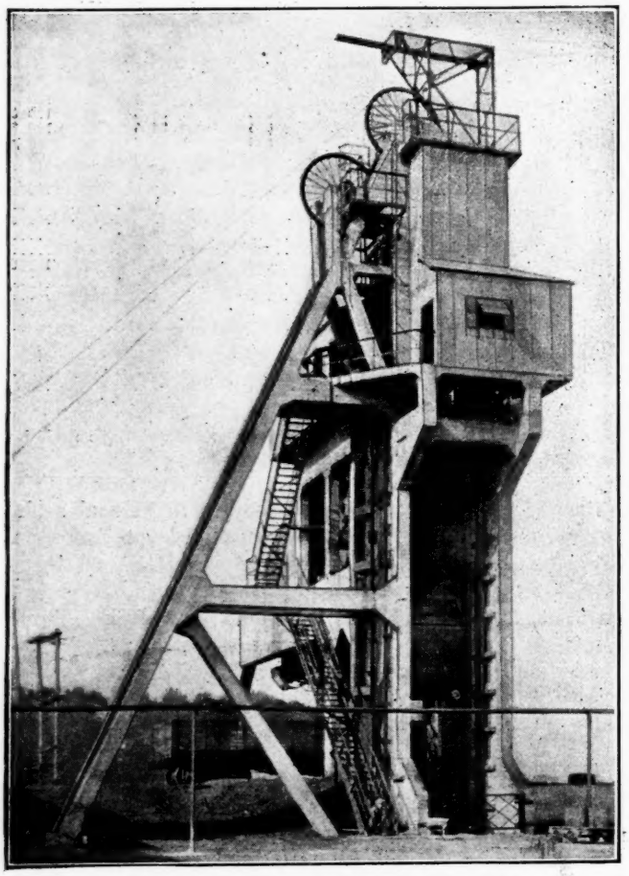
At 9:30 p.m., March 20, a second advance of 500 ft. was completed and at 2 p.m., March 22, five additional seals brought the air into the bottom of the main west entry about 700 ft. from the airshaft. At 2 p.m., March 24, with the completion of ten additional seals, fresh air was brought within 500 ft. of the fire zone. Examination beyond this point showed that all three entries were heavily caved and that, immediately below the falls, the temperature was about 79 deg. F. Three additional stoppings immediately below the fire zone were completed at 4 p.m., March 25.

As no further advance could be made by way of the main west entry, the men were withdrawn from the



AIR LOCK ENABLING CARS TO BE LOWERED WITHOUT ADMITTING AIR TO SHAFT

Built of 1 x 8-in. shiplap laid double with one thickness of building paper between. Top was covered with one thickness of byrkett lath made airtight with a thick coating of wood-fiber plaster.



HOISTING SHAFT AT KATHLEEN MINE

The careful concreting of the shaft and the solid concrete and paving-brick construction in the fan house and air ducts made it possible to shut the air off completely. This was an important factor in the mine recovery.

mine and, after removing the seal above the main shaft, the fan was started on pressure—that is, blowing—at normal speed. On March 28 the gas men entered the mine and made a complete examination. It was found to be free from explosive gas and the bodies of the seven victims were located in the parting off the third north entry, as before mentioned.

After the removal of the bodies on the morning of March 29 an exploration of the west end of the fire zone was made. The fire area was found to be restricted to the three main west entries, not reaching into the third and fourth cross entries. Although no smoke or visible evidence of active combustion was found at the west end of the fire zone the temperature at this point stood at 85 deg. F. With the construction of three stoppings above the fire line the burned area, about 250 ft. in length, was completely isolated. On April 6, with six concrete seals in place and surrounding the fire zone, the production of coal was resumed.

Ascertain Main Haulageway Had Caved Most

On May 28 the two outside concrete seals at the lower or eastern end of the fire zone were removed after two doors had been constructed below them. Then, with all except two gas men withdrawn from the mine, about 20,000 cu.ft. of air per minute was driven through the fire area. The temperature at the time of unsealing was 80 deg. F.

On May 29 a partial exploration of the caved entries was made. This showed that the left-hand or intake entry was heavily caved for 130 ft. of its length. The right-hand or return entry was similarly caved for a distance of 90 ft., and the center or main haulageway was found to be heavily caved for a distance of 200 ft. This entry showed evidence of having been subjected to the most intense action of the fire, the two outside entries being less severely damaged.

With gas men in constant attendance the air movement through the fire area was continued throughout the night of May 29, the temperature of the return air current rising gradually until it reached 170 deg. F. at 10 a.m., May 30. At this point the doors were closed and the concrete seals restored. It was evident that a hot coked or semi-coked mass at some point within the fire area had retained ignition heat. With the resealing of the place the temperature of the gas sampled through a valve in the lower central seal quickly dropped to 70 deg. F. The fire area will be kept sealed for a period sufficiently long to insure the complete exhaustion of all inclosed air and the extinction of the fire. A new roadway, developed to reach the territory beyond the sealed area, is now being used.

Barometric Pressure Rises One-Half Inch

Only one alarming situation developed in connection with the work of recovery. Until the seal was taken off the airshaft an extremely uniform barometric pressure was experienced. At 6 p.m. on March 20, however, the barometer stood at 29 in., thereafter rising gradually, until it reached 29.50 in. after twenty-four hours, this pressure being maintained for sixteen hours. At 10 a.m. on March 22 the barometer stood at 29.51 in. and thereafter gradually dropped for fifty hours, reaching its lowest point, 28.64 in., at noon of March 24. The fall thus occurring in fifty hours amounted to 0.87 in., equal to 11.82 in. of water, or an air pressure of 61.5 lb. per square foot. In the twenty-four hours preceding 2 a.m., March 24, the barometer fell 0.52 in., equal to a water gage of approximately 7 in. or an air pressure of 36.4 lb. per square foot, causing gas to leak past the temporary stoppings, thus forcing the men working without helmets outbye to withdraw from the mine. This experience demonstrated the value of careful barometric studies in the conduct of recovery work.

Top Coal Fell, Bringing Down Trolley Wire

Any study of this accident would be incomplete without some conclusion being drawn as to the cause of the fire. An empty trip had passed through the main haulage entry about twenty minutes before the fire was discovered. The entry was clean of all combustible material other than coal, no oil or explosives were in the vicinity, and no explosion of any kind occurred at this point.

The conclusion may be reached, therefore, that the trolley wire supported from the top coal, which throughout the entire southern Illinois field is left up to protect the shale roof, became loosened and fell, bringing the wire down onto a new section of track, laid with 40-lb. rail and put in a place only a few hours before, after a derailment. Failure to replace immediately the bonds, which it is the practice to arc-weld into position on the return, made an arc of serious proportions possible, the insufficient return preventing the circuit breaker from operating to cut off the current. Under such circumstances as these the fallen top coal would offer a splendid vehicle for the quick spread of a fire.

The brief period intervening between the sealing of the shaft and the reopening of the mine was made pos-

sible to a large extent by the character of the shaft and top construction employed, the fan, fan house and air duct making airtight sealing a reality. While it is not customary to anticipate the sealing of shafts in advance, the engineer designing the top works can without expense readily give consideration to such a contingency.

The Illinois State Director of Mines and his staff conducted the work of recovery throughout and were ably assisted by the representatives of the U. S. Bureau of Mines, which, as before stated made the necessary analyses of gas shown in the accompanying table. This work was thorough and painstaking. Extraordinary precautions were taken to insure that all helmet men were in perfect physical condition and a competent physician and surgeon was in attendance at all times.

Gas Being Plentiful, Unusual Care Taken

In addition, a man with extensive experience in the use and maintenance of helmet equipment scrutinized every man and the condition of his breathing apparatus as he stepped into the lock chamber. Where it was necessary to take down brick and tile stoppings these were removed by digging the fireclay from beneath them. No sledges were used in the explosive-gas area, and the temporary stoppings constructed of timber were put up with small nails driven with copper hammers.

Outstanding details in connection with the work were: (a) The careful analysis of gas samples taken at frequent intervals, which showed a loss of oxygen content in the mine atmosphere indicating the rapid exhaustion of the fire. (b) The painstaking study and planning of recovery operations done in advance, giving every man connected with the work a full opportunity to acquaint himself, through the medium of the mine map, with the exact situation. No suggestion from whatever source was considered unworthy of careful consideration. (c) Though the helmet crews worked in continuous shifts to accelerate recovery, no undue haste was permitted, and no one was allowed to go an undue distance ahead of fresh air. This made it possible to carry out a man who might from sickness or accident to his apparatus need a quick removal to fresh air.

Well Equipped with Fire Extinguishers

The foot of the airshaft of the Kathleen mine is equipped with a water line and portable chemical extinguishers are placed at every door and parting. A telephone service is maintained underground. A fire-foam engine is kept on the surface and a duplex carbon-dioxide extinguisher holding eighty gallons of chemical, quickly refillable from a water car, stands at the bottom ready for movement anywhere within the mine. In addition to these precautions a pressure tank mounted on wheels which will hold about 350 gallons of water under air pressure is being constructed for use in the mine workings. These two underground extinguishers are each equipped with 100 ft. of hose and fire nozzles. Permissible explosives are used for shooting the coal, which is undercut by chain mining machines. No other fire trouble than the one just related has ever been experienced in this mine.

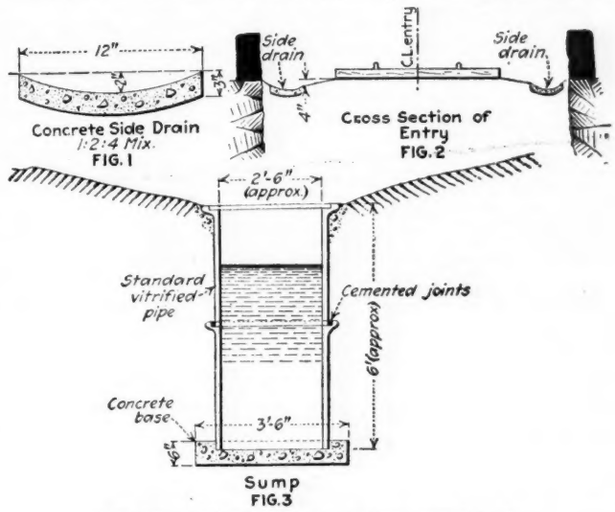
Experience gained in subduing this mine fire is here set forth in detail with the thought that it may be of value to mine managers and superintendents generally and that as a result the occurrence of similar disasters may be prevented.

Concrete Drain and Vitrified-Pipe or Precast-Cement Sumps for Mines

By O. H. Hampsch
Nashville, Tenn.

A SIMPLE and inexpensive side drain for underground roads may be built of concrete, as shown in Fig. 1. I have used such a drain along main entries where considerable wash has occurred on the roadway. This design is a modification of that used in highway construction by the Department of Public Roads and where conditions are favorable serves its purpose well. If properly constructed, these gutters will drain with a grade of 2½ to 3 in. per 100 ft. They may be placed upon either or both sides of the roadway, as necessity may require. A cross-section of an entry provided with these drains is shown in Fig. 2.

A simple and convenient sump for a gathering pump may be used in connection with the drains above mentioned. A neat construction of this kind, as shown



DRAIN AND SUMP FOR HAULAGE ROAD

Sump has capacity of 228 gallons. A tile 3-ft. in diameter will give a sumpage of 318 gallons.

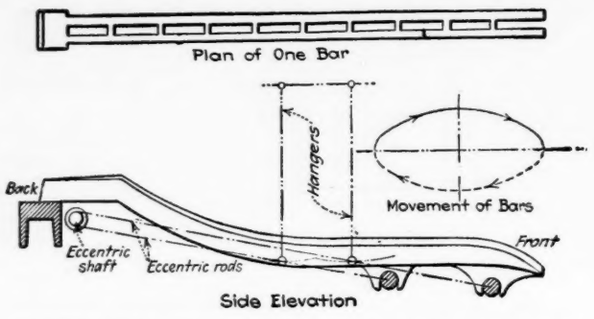
in Fig. 3, may be built of two vitrified sewer pipes set on a concrete base with the joint between them carefully cemented to make it watertight. If constructed with the dimensions shown, such a sump has a capacity of 228 gallons, while a tile 3 ft. in diameter and of the same height gives a capacity of 318 gallons. Such a sump is much to be preferred if a larger capacity than that afforded by the 2-ft. sewer tile is desired.

This sump affords a much neater and cleaner appearance than one made by merely digging a hole in the mine bottom. Standard vitrified sewer pipe usually may be procured locally and is easily placed in position. I should judge that precast cement pipe would answer the purpose equally as well as the vitrified tile, although I have never used this material. The dimensions shown on the accompanying drawings are those that have been successfully used in mines with which I am familiar. They might be altered or changed to suit other conditions as to volume and capacity and are here presented merely as a guide and a suggestion.

Device to Prevent Slack from Riding Over Screen Holes on Lump Coal

BY JOHN S. WATTS
New Glasgow, N. S.

WHERE run-of-mine coal containing a fair percentage of lump size is discharged into a shaking screen from the weighpan in batches of a ton or more at a time much of the small material rides across the screen upon the larger pieces. In order to overcome this difficulty and compel the small coal to pass through and the lumps to go over, the bar screen shown in the accompanying illustration was devised.



SCREEN BAR WITH ECCENTRIC MOTION TO ROLL COAL OVER

The advantage of a shaker screen over a gravity screen is that the fine coal cannot use the large as a sled over the holes in the screen. The revolving screen is the best size segregator of all if it were not for breakage. The shaker illustrated gives a motion which make it almost impossible for the fines to ride the lumps and does it without breaking the coal.

Referring to the side elevation it may be seen that the bars are supported movably at the rear end and the forward ends of alternate bars move under the action of eccentrics set 180 deg. apart. The eccentric rods, one pair if which is longer than the other pair, are hung at points about two-thirds of their length from the eccentric. The lower ends of alternate bars thus receive a similar but opposite elliptical motion, one being depressed and drawn backward while the other is elevated and thrust forward.

As a result coal resting upon the screen is first raised are carried forward by one half the bars, then by the other half. Lumps thus agitated of necessity spill off any material that may be resting upon them. This goes through the screen bars, the larger pieces passing on over the end. Furthermore, the vertical movement of the bars prevents any possibility of their becoming choked or clogged.

Ammonia Formed by Oxidation of Coal

TESTIFYING before the Committee on Spontaneous Combustion of the British Mines Department, Frank S. Sinnatt, head of the experiment station of the Lancashire & Cheshire Coal Association, said that experiments had shown that when coal is exposed to the air, ammonia is one of the earliest oxidation products. The quantity of ammonia obtainable from coal with mild oxidation will reduce the nitrogen content in the coal 8 to 10 per cent. In other words, the nitrogen compounds may be the most liable of all to oxidation, and the way in which the air acts on them may predispose the coal to spontaneous combustion.

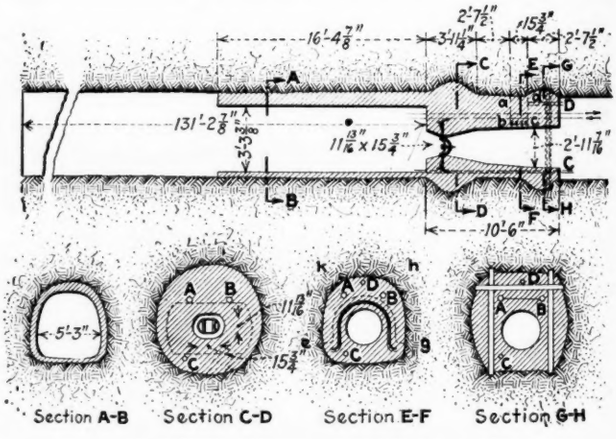
Dr. J. S. Haldane declared that not only marcasite but the cubical pyrite would oxidize freely when broken up. He had taken a lot of bright cubes of pyrite with edges still undulled from the slates of an old roof in a Scotch house which had been in place possibly one hundred years. Tested under ordinary conditions nothing happened, but broken up they oxidized rapidly. Dr. Haldane declared that pressure and breakage are what cause certain coals to catch fire underground. The coal that oxidized first was not the coal that first became hot. Given a crevice in the coal through which the air can pass, the coal will heat near the surface and pass through the crevice, steadily heating and oxidizing the coal that lies beyond and nearer the heart of the pillar. It is this coal which first creates a "gob-stink."

Storing Compressed Air in Rock Reservoir

A CHAMBER for the storage of compressed air has been constructed at the Hasard-Fléron colliery, in the Liége coal field of Belgium. It is described by M. Delbrouck in the *Annales des Mines de Belgique*. A blind heading close to the hoisting shaft at a depth of 702 ft. was closed at the open end by a reinforced-concrete wall. The reservoir thus made is 131 ft. 2⅞ in. long and has a capacity of 4,767 cu.ft., the air being admitted at a pressure of 71.11 lb. per square inch, but this is to be increased to 99.56 lb. per square inch.

To strengthen the walls rails were embedded in it. An opening was left in the center to give access to the reservoir. This is normally closed by a manhole cover taken from a disused boiler, the surrounding plate being embedded in the concrete (see Section *C — D*). Two 6-in. pipes were carried through the wall, one serving for the admission and the other for the discharge of compressed air. A 1-in. pipe (*C*) furnished with a valve serves as a means of letting out the air into the mine.

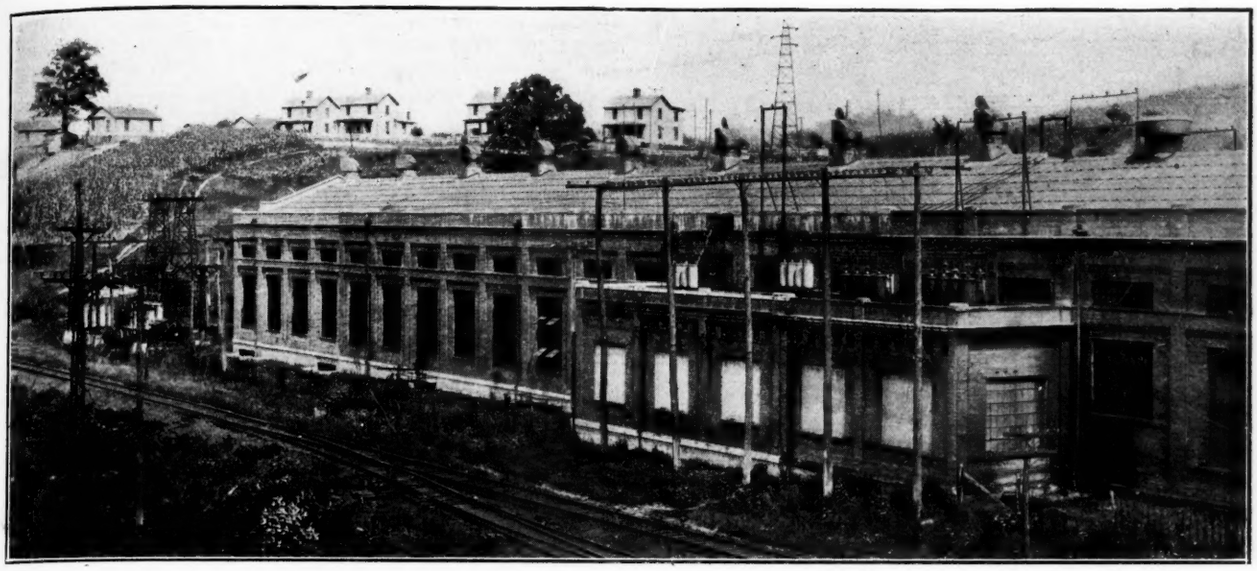
In constructing the dam an open space was left, represented by *a b c d* in the longitudinal section and by *e g h k* in the section on *EF*, a pipe (*D*) 2 in. in diameter giving admittance to this chamber. Though *D* a slow-setting liquid cement was injected under a pressure of 198½ lb. per square inch so as to fill all the fissures in the surrounding rock and the interstices left between



AIR RESERVOIR IN THE SOLID ROCK

Pressure will be about 100 lb. per sq. in. The chamber will hold 5,000 cu.ft. measuring as it does roughly 6 ft. x 6 ft. where unlined. Pressure falls in chamber about 1½ lb. in five hours.

it and the retaining wall. The proportion of cement in the mixture was gradually increased to 50 per cent. The results have been most satisfactory. Air was admitted to this natural tank at a pressure of 99.56 lb. per square inch, and five hours later the pressure had fallen only 1.42 lb.



HUTCHINSON CENTRAL POWER PLANT OF CONSOLIDATION COAL CO., WITH WESTINGHOUSE AND GENERAL ELECTRIC LIGHTNING ARRESTERS OF ELECTROLYTIC TYPE

How to Guard Electrical Equipment by Fuses, Starting Devices, Independent and Tie Circuit Breakers*

Overload Relays Tested by Opening One Phase at a Time—Substitutes for Starting Devices—Power Failure Causes Fuse to Blow—Starters Should Not Be Determined by Capacity of Motor—Many Advantages of Circuit Breakers

BY B. F. GRIMM†
Fairmont, W. Va.

AS IT is apparently impossible to procure electrical devices that will maintain their accuracy, equipment of this kind should be given frequent inspections and careful tests. In many instances the apparatus already installed may be caused to prove its own condition and no additional testing instruments will be needed. In large operations it is not always practicable for inspectors to make proper tests at all the mines. It is always possible, however, to instruct the men at the various operations how they can try out and adjust the protective devices. Weekly reports should be required showing that proper tests and adjustments have been made.

A simple method of testing overload relays on three-phase alternating-current induction motors is to open one phase at a time. The machine should then draw a heavy single-phase current, on which the relays should operate and trip the motor-starting device. It has been found safe to open single-pole knife switches on 2,200-volt circuits feeding three-phase motors of capacities up to 150 hp. By opening all three switches, one at a time, but reclosing each before the next is pulled out, a complete test will be made of all relays as well as of the low-voltage release that is usually installed.

I have heard the statement made that three-phase motors are safer without fuses than they are when provided with them. Such impressions doubtless were gained from installations where fuses were installed in the main incoming line of sufficient capacity to carry the starting currents. With this arrangement, when mishap would befall one of the fuses, the motor would continue to operate on current drawn through the other two.

These might be of a capacity three times the current rating of the motor. If sufficient load were on the machine it might then carry three times its rated current, and as the heat generated in the windings varies as the square of the current, it would then generate nine times its normal heat. This would be sure to roast the windings in an extremely short period.

Three motor-driven fan installations have recently been damaged or destroyed. In two of these cases alternating-current motors were completely roasted because the protective devices did not function properly, and in the other instance proper overload protection had not been provided. One of the three fan motors was rated at 86 amp. and the current actually consumed by this machine was 85 amp. This motor was installed with an old type of starting compensator not furnished with overload current coils. No fuses were provided. The transformers serving this motor were fitted with fuses, but it was necessary to select them with a capacity suited to a starting current approximately three times as great as that required in running. This motor was belt-connected to its fan.

One night a bearing burned out, and as a result the motor and the three transformers were completely roasted. While another motor and new transformers

*First installment of an article read before the West Virginia Coal Mining Institute at its Fairmont meeting, June 7, 1921, and entitled "Protection of Electric Equipment in Coal-Mining Service." The second installment, entitled "Guarding Transformers and Rotaries from Overload and Entire Installation from Lightning and Surges," will appear next week.

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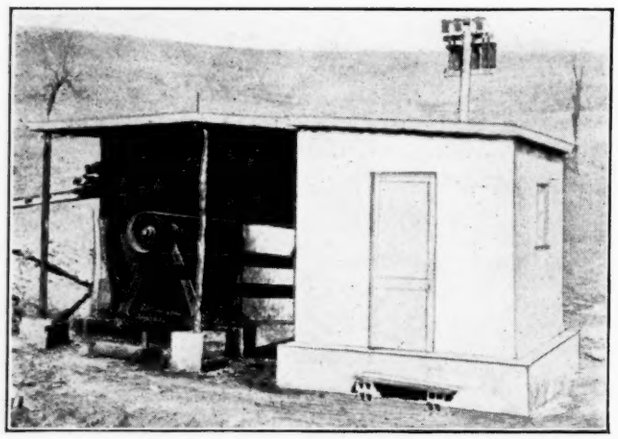


FAN INSTALLATION THAT WAS ROASTED

Motor had an old type of starting compensator not furnished with overload current coils. The motor was not supplied with fuses, reliance being placed on the fuses installed on the transformers, but they had to be of a capacity three times the running current of 85 amp. As a result of a hot bearing the motor and three transformers were completely roasted.

were being installed the mine lost a day's tonnage. When the second machine was put into position, three fuses of proper rating were placed on the running side of the starting compensator. It will be impossible for burn-outs such as those just mentioned to occur again so long as these fuses are in the circuit.

As has been stated, this motor normally takes 85 amp. Tests show that it will consume 181 amp. when running single-phase. Sometimes one wire fails on the transmission line to which this motor is connected and the motor going on single phase takes 181 instead of 85 amp. As the present fuses are rated at 90 amp. the fuse will blow and the motor stop as soon as this wire is out.

In order to be able to use fuses of proper size, suitable starting devices should be provided either to limit the starting current or to relieve the fuses from carrying it. If the installation does not warrant the purchase of a suitable starting device, a good makeshift can be provided by installing a single-, double-, or triple-pole switch, preferably one provided with a spring suited to the conditions. This will bridge the fuses during the starting period. The attendant should be carefully impressed with the importance of opening this switch as soon as the start has been made.

Much Trouble with Small Pump Motors

Large numbers of 2-hp. direct-current pump motors in service in the mines have been completely burned out because of insufficient protection. Some of these machines were equipped with hand-starting rheostats and 10-amp. fuses. As the current rating of these motors varies from 8 to 10 amp., this protection should be ample. It was found, however, that the pumpers would tie the rheostats in the running position and bridge the fuses, so that when anything happened to cause an overload on the motor no protection would be afforded and the motor accordingly would be burned out.

After testing various automatic starters, it was finally decided to install such devices on all 2-hp. pump motors in the mines. These starters are of the current-limit type. They consist of two contactors mounted on a slate base under which suitable starting resistance is installed and the entire contrivance placed within a steel cabinet box. A single-pole knife switch and a 10-amp. fuse is connected between the positive line and the motor. The starter is connected between the motor and the negative line.

When the knife switch is closed the starting current traverses all of the starting resistance and No. 1 contactor coil. The motor begins to revolve, and as it gains speed the current flowing through the armature becomes smaller. When the current is reduced to a certain quantity, contactor No. 1 closes and short-circuits part of the starting resistance. The motor continues to gain speed and the starting current continues to decrease until finally No. 2 contactor closes and short-circuits all the starting resistance, also No. 1 and No. 2 contactor coils. This allows No. 1 contactor to open, but No. 2 is held closed by a shunt coil as long as there is as much as 35 per cent of normal line voltage. Good results have been obtained with these starters and the mine superintendents and foremen are well pleased with them.

Power Failure Causes Blowing of Fuse

A few of these devices have been found, however, that will not work with a 10-amp. fuse in the circuit. This is because the second contactor remains closed when the mine circuit fails. When power is restored the motor starts with full line voltage, and sufficient current is taken to blow a 10-amp. fuse. At first it was thought that with some starters the reason why the fuse failed to hold was because the shunt coil held the second contactor closed, even when the mine voltage was pulled very low by a heavily-loaded locomotive. This permitted the motor, when the potential returned to normal, to draw such an excessive instantaneous current that the fuse would be blown out.

Recent tests made on a 2-hp. 220-volt shunt-wound pump motor with a 4½-amp. load at 250 volts showed that if the line pressure dropped to 30 volts with No. 2 contactor remaining closed and then suddenly went up to 250 volts the fuse would hold. By decreasing the voltage still further to 25 and then suddenly restoring it to 250 the fuse would blow.

As a mine voltage below 100 on a 250-volt circuit is rare, I do not believe that a fuse is likely to blow because of any sudden fluctuations of potential even if the last contactor remains closed.

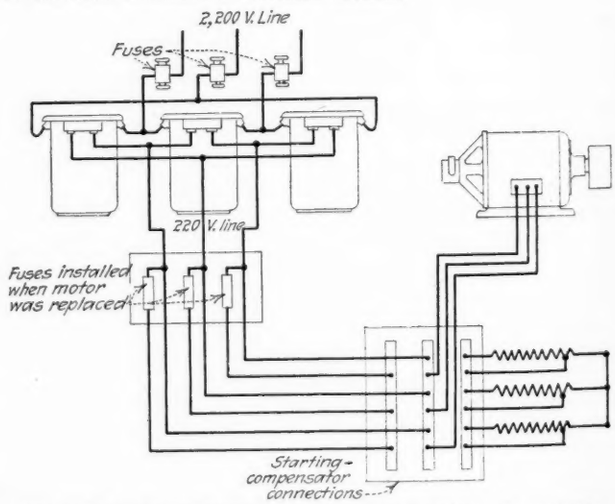


DIAGRAM OF WIRING FOR INSTALLATION IN UPPER LEFT CORNER OF PAGE

Fuses have been provided for the motor as well as the transformers and these fuses are on the conductors through which the current passes in normal running and not in starting. These give satisfactory service when of a capacity only 5 amp. above running load.

Two other types of starters are on the market. One of these cuts out the starting resistance in definite periods of time; the other cuts out this resistance as the voltage across the armature increases. As the result desired is a limitation of the current, it seems most logical to design the starter so that it will operate as a direct result of variation in the value of the starting current.

Furnish Starter to Suit Current Input

It should be kept in mind when using automatic starters of the current-limit type that the current and voltage rating of the starters should correspond with the actual operating conditions and not necessarily with the name-plate rating of the motor. Experiments were conducted for some time with a 30-hp. automatic starter on a 30-hp. mine-fan motor. The starting resistance would burn out in a few days after being installed, and it was impossible to adjust the contacts to prevent this result. Finally a 15-hp. automatic starter was substituted. This gave perfect satisfaction. The current input to the motor corresponded to a 12- to 13-hp. load. The trouble with the 30-hp. starter evidently arose from lack of sufficient current to close the contactors. This allowed the motor current to pass through the starting resistance.

Mine Fires Lessened by Circuit Breakers

Protection of line circuits from overloads and shorts should receive careful consideration, especially in large mines. Such protection is necessary in order to prevent the mine fires as well as avert the shutdowns which short circuits may cause. In the past many serious mine fires have started from the short-circuiting of current. When by reason of falls of slate trolley wires drop down or sag they are liable to come in contact with mine cars thus starting fires.

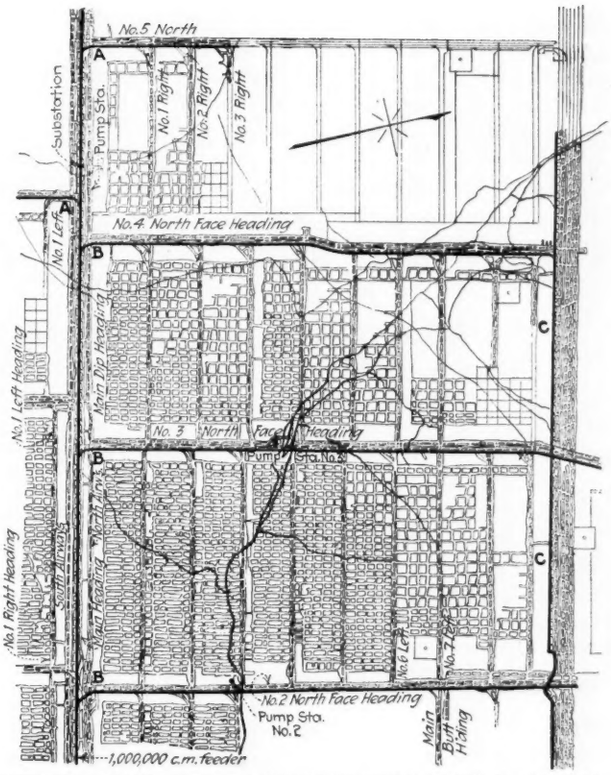
It has been found that these troubles can be prevented by the use of automatic reclosing circuit breakers. These instruments open instantly when the current flow exceeds their setting. If the excessive current is due to a short circuit, the breaker will remain open as long as the conditions causing the short circuit are sustained.

The use of these breakers on branch headings often saves many shutdowns to the entire mine. With a circuit breaker installed on the various branch headings short circuits on one of them put out of service only the feeder and trolley wires on this particular heading, mining operations on the other headings continuing without interference.

There are two general types of automatic reclosing circuit breakers. The first is known as the independent feeder and the second as the tie feeder, or the sectionalizing type. An independent feeder supplies all the power to the load to which it is connected. It is the only feeder to that load, and the breaker in such a line controls the entire current input to the load circuit. When a load circuit is supplied with power from more than one source a tie feeder is used. Such a feeder is in multiple with one or more similar connections from the same or other sources of power, and is tied in with or joined to such other feeders through the load circuit.

Open at Any Predetermined Current Value

Both these types of breakers can be adjusted to open at any predetermined current value. They also can be set to stay open as long as a dead short or an excessive



SECTION OF MAP OF A CONSOLIDATION COAL CO. MINE
At A and B are independent feeders. When the cables at C can be connected the automatic reclosing circuit breakers at B will be converted to tie breakers so that current may pass through them in either direction as need may arise.

demand remains connected to the load side of the breaker. They also may be so set as to remain open through a definite time interval varying between one second and one minute or more. With this adjustment the breaker will remain open until the time setting has expired, even if the overload or short is removed before that period has elapsed. An independent feeder breaker should not be installed in place of the sectionalizing breaker, as under such circumstances its control coil would be burned out.

The Consolidation Coal Co. has had an independent feeder breaker in service for several years at one of its substations in Pennsylvania. This substation is several hundred yards from a tipple, which is the closest point where men are on duty. The instrument gives better service than can be expected from a manually-operated circuit breaker with a substation attendant always at hand. No time is lost in reclosing the circuit after the overload or short circuit has been removed. With a substation attendant appreciable time may be wasted in this manner each day, especially if overloads or short circuits are of frequent occurrence. This would result in tonnage losses correspondingly large.

Hope to Cut Out Short-Circuits and Fires

Another independent feeder breaker has been in service about one year in a substation in the West Virginia division. This has given the company perfect satisfaction. At the end of each day's shift the setting of the breaker is made low, so that though only the mine pump is being operated through the night, protection from light short-circuits or overloads is afforded to the mine feeder.

Five automatic reclosing circuit breakers have been installed and in service for several months. Nineteen

additional breakers have been purchased for three other operations, and they are being put in place on branch circuits. It is hoped to eliminate the shutting down of entire mines because of "shorts" and also to forestall fire hazards arising from this cause.

With ineffective track bonding a line wire might conceivably fall down on a mine car or on the rails without drawing sufficient current to trip the circuit breaker. Frequent tests should be conducted to see that the breaker is ready to function whenever its action is needed. Dead short-circuits should be made purposely between the feeders or trolley wires and the rails at places remote from the breakers. If the bonding is insufficient, this test will reveal the fact.

Fighting a Dump Fire with Gunite and Carbon Dioxide

Dump Fire Under New Building is Quenched by Sodium Bicarbonate and Foundation Solidified by Cement Gun—Heat of Fire Changes Bicarbonate to Carbonate, Releasing a Dampening Cloud of Carbon Dioxide

BY ALPHONSE F. BROSKY
Pittsburgh, Pa.

DUMP fires are among the most difficult conflagrations to fight, and little improvement has been made in the methods of coping with them, though they are by no means rare and nearly every coal town has one or more to contend with. In fighting dump fires, as in extinguishing flames in coal-storage piles, the main difficulty is in reaching the source.

Usually the fire does not manifest itself until it has spread over a large area—especially is this true where an impervious blanket of clay or soil covers the dump. The surest means of combating it is to remove the ignited material and then provide means to prevent future outbreaks. In many cases the future security of the dump from ignition cannot be provided for. Many dumps contain wood and oil-bearing shales which provide excellent opportunities for spontaneous combustion and for the support of the fire once it is started.

An interesting fire recently took place in a dump at Wheeling, W. Va., which, while it was not a mine dump and its burning did not jeopardize a mine building, gives valuable suggestions as to methods of combating such conflagrations. This fire threatened at one time the destruction of an addition to the Central Glass Works, which addition was constructed only three years ago. The older part of the plant rests on a white sandstone formation, but it was necessary to extend the addition over the dump, which consisted of cinder, slag, brickbats, soil, clay and many kinds of material which, like those in the ordinary mine dump, seemed little likely to permit or support combustion.

The dump at its maximum depth, as determined by boreholes, is about 30 ft. deep, and it extends for several acres. Until it caught fire it showed no sign of settlement or lateral movement. Without a doubt the high compressive strength of the bulk of the material of which it was composed, together with its good binding qualities and the filling of the interstices with small particles, formed a compact mass fully equal to the task of supporting the building placed on it. Therefore at the time the annex was built the dump was considered safe. That this belief was justified has been proven by the true alignment maintained by the annex during the three years of its existence.

In the spring the company built a large steel-ribbed smokestack on the fill, placing it between the annex and the creek. The stack was connected to the furnaces, located in the older building, by means of a subterranean firebrick flue which penetrated the dump. In June, last, the company began to notice an increase in the temperature about the plant. The temperature gradually climbed until in spots the surface became so warm that the bare hand could not be held on it. It was then that actual damage to the building began. The concrete floors commenced to buckle and heave, settlement of the building was noticed, and cracks appeared in the walls. At the time of my visit the building had settled fully 1½ ft. at one place, the once rectangular window openings had taken a pronounced rhomboidal form, and many large cracks were visible.

GUNITE INJECTED INTO THE SMOLDERING MASS

In order to check this settling, and at the same time attempt to stop the fire, a cement gun was used to inject a 1-to-5 gunite at a pressure of 50 lb. The hottest spots were first determined by driving down solid metal rods at various places and noting the comparative temperatures over the region. The men in charge approximated the affected area at one acre. Steel pipes with a diameter of 1¼ in. were driven down into the selected points, and gunite was discharged into the dump.

The nozzle of the gun was fastened to the pipe by means of an ordinary union. The holes in the water ring of the nozzle body were drilled out to twice the standard diameter to allow a larger amount of water to be used than in ordinary gunite work with the purpose of providing a more permeable mix. Where regions under the annex were affected the concrete floor was removed. In this manner 200 barrels of cement and 1,000 barrels of sand were used.

The gunite was found to have traveled many feet from the point of entrance. Wherever the gunite penetrated, satisfactory results were obtained. At such places a gradual decrease in the temperature was noticed, and the injection of the gunite possibly prevented dangerous cavings of the burned out cavities.

It was not possible, however, to place the material as fast as the fire spread. Evidently it was making rapid headway. The company then decided to abandon temporarily the cement gun as a fire extinguisher, intending to use it later to solidify the dump after the fire had been quenched by quicker means. This decision led to the trial of chemical fire-fighting apparatus.

The method adopted is known as the Thomas system, which depends on the smothering effect of carbon dioxide. A sodium-bicarbonate (baking-soda) solution made up of 20 lb. of the soda to 150 gallons of water is used, which breaks up, on the application of enough heat, into sodium carbonate and carbon dioxide. The latter,

being heavier than air, sinks to the bottom of the fill, and accumulates as a huge cloud, thus choking the fire.

The solution is pumped at 50 lb. pressure through ¾-in. pipes 10 ft. long, at the rate of 150 gallons per minute, the pump used being manufactured by the American Steam Pump Co., of Battle Creek, Mich. It is an internally-packed type, 10 x 16 in., the steam end being compounded. The solution is made up in a Thomas fire-control mixer, which is easily attached.

This device automatically proportions the correct amounts of soda and water used. The claims made for the Thomas system are: (1) It provides the quenching effects which water when used alone will afford, with the smothering effects due to the carbon dioxide liberated at the surface of the burning material. (2) A sealing and fireproofing effect is furnished by the carbon dioxide. (3) A chilling effect is caused by the heat absorption necessary to break up the bicarbonate of soda. (4) With a limited supply of water the efficiency of the water is increased many times by the addition of the soda. (5) The bicarbonate solution is inexpensive.

How Rank of Eastern Coal Changes with Location*

Generally Speaking the Volatile Matter and Moisture Decrease as the East Is Approached, but the Decline in Volatile Matter Starts Not Far From the Pennsylvania-Ohio Line

BY R. DAWSON HALL†
New York City

THOUGH coming with some authority the expression "coal rank" or "rank of coal" has not become properly established in the coal industry which still likes to speak in broad terms of "coal quality," using that word to cover four entirely different considerations: (1) The freedom of the coal from ash and sulphur, (2) the low percentage of volatile matter, (3) the absence of weathering, and (4) the freedom from clinkering.

Coal rank is an expression which has reference to the degree of mineralization of the coal as expressed by the ratio between the fixed carbon and the volatile constituents in the moisture-free coal, the moisture which comes off below the boiling point not being considered as a true part of the coal. As it has often been expressed, coal rank is based on the ratio of fixed carbon to volatile matter "in the true coal substance," though it cannot be said that the fixed carbon and the material driven off in coking above the boiling point constitute all the material that is truly coal. Much of the ash and also of the sulphur is intrinsic and really part of the coal. No plant life can exist without ash-forming substances and the combustion of present-day wood or plants does not give an ashless product. Nevertheless in its brevity and popular appeal the expression "true coal substance" is not without advantages.

To illustrate the relation between the rank of coal and its location in the northern half of the eastern fields of the United States, a map, three tables and three graphs have been prepared. Fig. 1 shows a map of the region referred to with three lines radiating from Gettysburg, Pa. Fig. 2 shows the percentages of volatile matter in the "true coal substance" (as commonly but erroneously defined), as they occur along the long due-east line.

It will be noted how the percentage increases rapidly at first as progress is made toward the West, which in the graph is to the right. After Bellaire, Ohio, is reached, however, the change is small and before Bellaire some reduction in the vertical uplift of the curve is to be noted. When Missouri is reached the percentages of volatile matter are found to be extremely irregular.

The small spots near the bottom of the diagram show how the moisture percentage changes. In general that percentage increases markedly toward the West. Note the jump when Illinois is reached and the similarity of its moisture percentage to that of the Missouri coal. The moisture percentage though lower in Pennsylvania is somewhat irregular, but too much stress must not be put on this fact when the moisture is low as all chemists know this figure is quite erratic, some of the moisture being mechanically combined and not a real part of the coal.

A few of the points on the graphs are of coal found at places somewhat off the lines drawn in Fig. 1, it

*Part of an address delivered before New Haven Section, American Chemical Society.

†Editor, *Coal Age*.

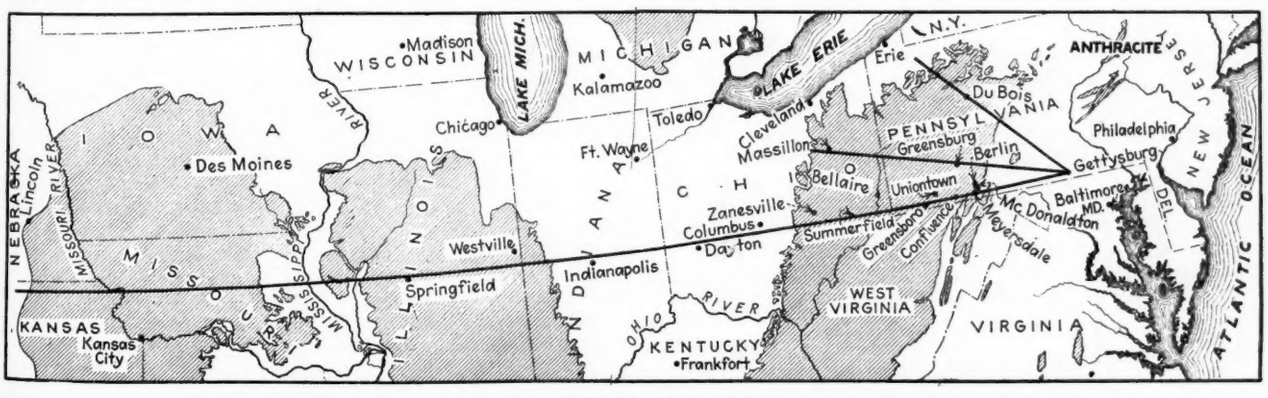


FIG. 1. NORTHERN HALF OF COAL FIELDS IN EASTERN HALF OF UNITED STATES
Three lines radiating from Gettysburg are drawn. Along these lines on a reduced or increased scale as the case may be, the three graphs in Figs. 2, 3 and 4 are plotted.

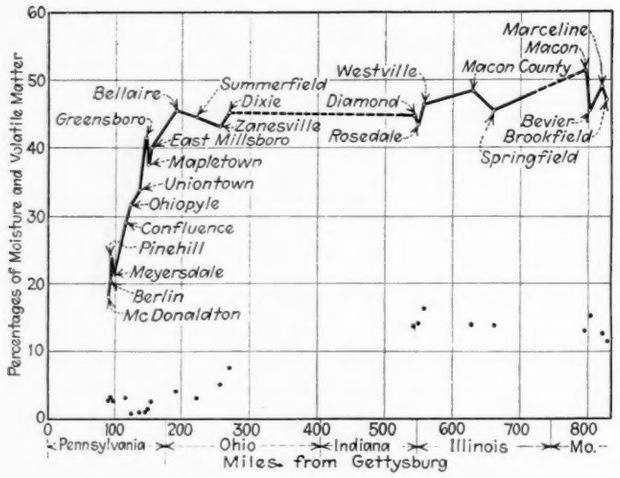


FIG. 2. VOLATILE MATTER AND MOISTURE ON GETTYSBURG-SPRINGFIELD LINE

Percentages of volatile matter increase rapidly westward till Bellaire is reached, after which the figure is always high, but varies somewhat irregularly.

being difficult to get enough analyses along any given line. The distances are figured radially from Gettysburg and therefore practically as a projection on the basal line between Gettysburg and Springfield, Ill.

Fig. 2 shows a line between Gettysburg and Massillon, Ohio. This line barely cuts the Broad Top field in which Hopewell is found. The coal at that town has, however, been introduced into the graph and it will be noted that instead of being more mineralized than that at Winber it is less far advanced toward anthracitization. It will be noted that from Hopewell to Winber is about seventy-five miles and for the most part between these two points there is no coal, the Broad Top area being a carbon-insula well removed from the main Appalachian field. It will be observed here as in Fig. 2 that the coal in the East is in general more completely mineralized than that to the west of it, and that the moisture content increases as the coal is traced westward. As the scale of distance in the three graphs is not the same the steepness of the slopes in the three cannot be compared.

In Fig. 4 is shown the line passing from Gettysburg to Brockwayville, Pa. It runs into and out of the coal area. A slight irregularity occurs near Houtzdale and Smoke Run, Pa., which may possibly be accounted for by the mineralizing effect of the fault in the first basin, which occurs in that neighborhood.

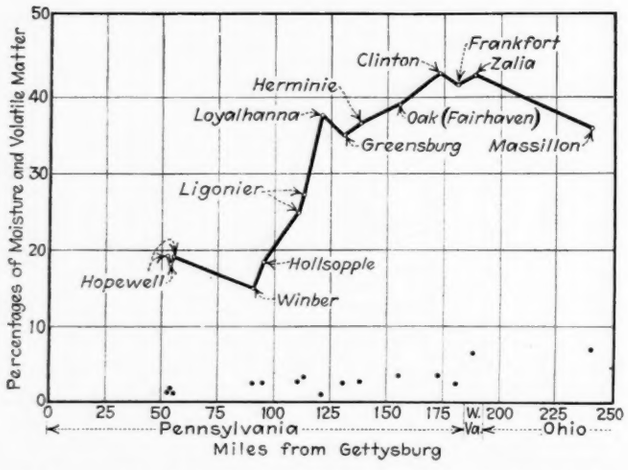


FIG. 3. SAME DATA ON GETTYSBURG-MASSILLON LINE

Hopewell which is a trifle north of this line has a somewhat high percentage of volatile matter for a point so far east. The rise is steady, from Winber westward, till after the Pennsylvania-West Virginia Line is reached, when apparently a slight decrease takes place.

TABLE I. VOLATILE MATTER AND MOISTURE OF COAL ALONG A LINE TEN MILES SOUTH OF FORTIETH PARALLEL

Locality	Distance	Volatile Matter	Moisture	Bed
Pennsylvania, Adams County				
Gettysburg	...	....	....	
Somerset County				
Macdonaldton	92	18.2	2.6	Lower Kittanning
Berlin	94	20.4	3.0	Upper Freeport
Pinehill	95	24.1	....	Little Pittsburgh
Meyersdale	96	21.3	2.7	Pittsburgh
Confluence	116	29.2	2.8	
Fayette County				
*Ohiopyle	122½	31.8	0.7	Lower Freeport
*Uniontown	136	34.0	1.0	Pittsburgh
Greene County				
*Greensboro	145	41.6	1.0	Pittsburgh
*Mapletown	148	37.6	1.3	Sewickley
*East Millsboro (Fayette County)	150	40.0	2.5	Pittsburgh
Ohio State Line	178	....	....	
Ohio Belmont County,				
Bellaire and State Line	190	45.4	4.1	Pittsburgh
Noble County				
*Summerfield	220	44.5	3.1	Meigs Creek
Muskingum County				
*Zanesville	255	43.1	5.1	Upper Freeport
Perry County				
Dixie	268	45.2	7.6	Middle Kittanning
State Line	406	....	....	
Indiana, Parke County				
Diamond	543	44.7	13.7	Brazil Block
Rosedale	548	43.4	13.9	Brazil Block
Vermilion County				
State Line	550	....	....	
Illinois, Vermilion County				
2 m. S. of Westville	556	46.5	16.2	No. 6
Macon County				
Unspecified	...	47.1	15.6	No. 6
Unspecified	628	48.3	13.6	No. 5
Unspecified	628	48.2	14.8	No. 5
Sangamon County				
Springfield	660	45.4	13.9	No. 5
State line	743	....	....	
Missouri, Macon County				
Macon	797	51.4	13.0	Mulky
1 m. S. of Bevier	801	48.8	13.8	Bevier
1½ m. S. of Bevier	801	44.90	16.5	Bevier
2 m. S. of Bevier	801	44.74	15.3	Bevier
2½ m. S. of Bevier	801	45.4	13.8	Bevier
Linn County				
Marceline	821	49.1	12.5	Tebo
Brookfield	828	47.0	11.4	Tebo

* Where analyses are marked with a star they are from State Geological Reports which, being made before methods of analysis were fully standardized, are subject to correction.

TABLE II. VOLATILE MATTER AND MOISTURE OF COAL ALONG GETTYSBURG-FOSTORIA LINE

Locality	Distance	Volatile Matter	Moisture	Bed
Pennsylvania, Adams County				
Gettysburg	....	....	....	
Bedford County				
3½ m. S.E. of Hopewell	52½	19.3	1.3	Barnett
3 m. S.E. of Hopewell	53	18.0	1.7	Barnett
2 m. S.E. of Hopewell	54	18.8	1.2	Upper Freeport or Kelley
2 m. E. of Hopewell	54½	18.9	1.6	Upper Freeport or Kelley
Somerset County				
Winber	90	14.5	2.4	Lower Kittanning
Winber	90	15.5	2.5	Lower Kittanning
Winber	90	14.0	3.3	Lower Kittanning
Winber	90	13.5	2.5	Lower Kittanning
Winber	90	13.5	3.0	Upper Kittanning
Hollsopple	95	18.4	2.5	Lower Kittanning
Westmoreland County				
3 m. S.E. of Ligonier	110	25.0	2.6	Upper Freeport
3 m. N. of Ligonier	112½	26.9 / 27.1	3.3 / 2.8	Pittsburgh / Pittsburgh
*Loyalhanna	120	37.8	0.9	Upper Freeport
4 m. No. of Greensburg	130	34.4 / 34.7	2.7 / 2.8	Pittsburgh / Pittsburgh
Herminie	137	35.4 / 36.6	2.8 / 2.0	Pittsburgh / Pittsburgh
Allegheny County				
Oak (Fairhaven)	154	38.8	3.5	Pittsburgh
Clinton	172	42.8	3.4	Pittsburgh
Beaver County				
Frankfort	180	41.4	2.5	Pittsburgh
West Virginia State Line	184½	....	....	
West Virginia, Hancock County				
Zalia	187	40.52	6.5	Rogers
Zalia	187	42.4	4.2	Mahoning
Ohio State Line, Virginia	192½	....	....	
Ohio Stark County				
Massillon	239½	36.0	6.95	Sharon

Line passes through Franklin, Fulton, Bedford, Somerset, Westmoreland, Allegheny and Beaver Counties in Pennsylvania, Hancock County in the Pan Handle of West Virginia, Columbiana, Carroll and Stark Counties in Ohio. It runs almost through Chambersburg, Latrobe, Pittsburgh and Tiffin. Its course is about N. 73°, 24′ W. For meaning of asterisk, see Table I.

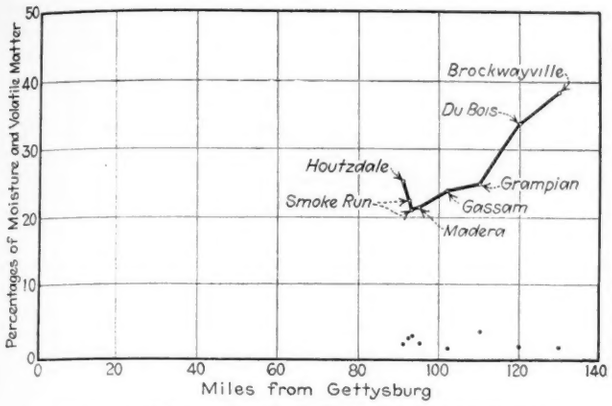


FIG. 4. SAME DATA ON GETTYSBURG-BROCKWAYVILLE LINE

The Houtzdale coal appears to have a larger percentage of volatile matter than Smoke Run or Madera or even Gassam, which are further to the West. But with this exception the general rule of the eastern half of the United States is observed—"More west, more volatile matter."

TABLE III. VOLATILE MATTER AND MOISTURE OF COAL ALONG GETTYSBURG-DUBOIS LINE

Locality	Distance	Volatile Matter	Moisture	Bed
Adams County				
Gettysburg	...	....	....	
Clearfield County				
Houtzdale	91	26.3	2.3	Brookville
1½ m. W. of Smoke Run	92¾	23.5	3.2	Miller or B
3½ m. S. E. of Smoke Run	93	22.2	3.4	Miller or B
Madera	95	22.5	2.4	Brookville or A
Gassam	102	25.0	1.9	Lower Freeport
¼ m. W. of Grampian	110	26.0	4.1	Lower Freeport
3½ m. S. of Du Bois	120	34.8	2.0	Lower Freeport
Jefferson County				
1 m. W. of Brockwayville	130	39.4	1.9	Lower Freeport
1 m. W. of Brockwayville	130	37.0	3.10	Upper Freeport
1 m. W. of Brockwayville	130	39.3	1.9	Lower Kittanning
About end of coal	134	....	....	

Line goes through Huntingdon, Tyrone, DuBois and Brockwayville, crossing Cumberland, Huntingdon, Blair, Clearfield, Jefferson and Forest Counties. Its direction is N. 42°, 37′ W.

Returns to Mine for Tools and Is Killed; Should Company Pay Compensation?

THE Pennsylvania Workmen's Compensation Board in the appeal by the Hudson Coal Co., of Scranton, from the award of compensation by Referee Lewis, District No. 9, to Apolonia Osika and others, has set aside the award of the referee and has disallowed compensation. The opinion was written by Chairman Harry A. Mackey.

When the case first came before the referee he found that Louis Osika, the deceased husband of the claimant, had been an employee of the Hudson company and that on Feb. 14, 1920, the deceased had actually worked for the last time for the defendant. He also found that because Osika had received burns at his own home he could not return to the premises of the defendant until March 10, 1920.

On that day he went to the Delaware mine of the company and asked permission of the assistant mine foreman to go into the mine for his tools. This request was granted and he arranged with a car runner to take his tools out of the mine. Following the route customary for men to take who leave that part of the mine, Osika was struck by a trip of mine cars and his death followed the same day. The referee found that the right to go into the mines to get his tools was part of his contract of hiring and that the company reserved the right to inspect the tools before they were removed.

The referee also found that the deceased had never been discharged and that his absence from work was due to his injury at home. He held that Osika before he had actually quit the premises was in the course of his employment and that "having met with an accident upon the employer's premises, due to the operation of the employer's business, his widow would be entitled to recover compensation."

The case then came before the board upon appeal and the board returned it to the referee with the observation that the deceased might have visited the mine merely for the purpose of taking his tools away in order to work for some other employer. The referee reassembled the facts, as he understood the testimony without further hearing, repeating his original findings.

The board merely affirmed the findings of fact and conclusions of law and then there was an appeal to the Court of Common Pleas of Luzerne County. The decision in the case said in part:

"We do not believe that the compensation law was intended to cover, or should be construed to cover, such a case. It seems to us the relationship between the defendant and the deceased, as employee and employer, had been clearly severed, notwithstanding his right to bring out tools. His act in so doing inured to his exclusive benefit, not being in furtherance of his employer's business or in the course of his employment. If this be so, the referee's finding of fact is not supported by competent evidence, and we have the power, under the amended Act of 1919, to reverse him and remit the record for further hearing on that ground."

No further testimony was produced at the subsequent hearing, and the record, the board says, is now exactly the same as it was when before the Luzerne court upon appeal.

"In deference to the learned opinion of this able and distinguished court," writes Chairman Mackey, "we feel that we have no other course than to reverse the referee's conclusions of law, and find that under the facts as stated, as found by him, the relationship of employee and employer did not exist between Louis Osika and the Hudson Coal Co. upon the day of the accident, as described in the testimony; that when he sought and gained permission to remove his tools from the premises he was not furthering the interests of his employer, that he was not in the course of his employment, and that when he was injured he was only, as far as the compensation law is concerned, a stranger to the employer and not entitled to protection under the act."

Gets Wet and Dies; Compensation Awarded

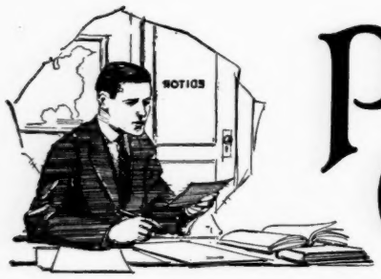
IN AN opinion on an appeal by the defendant from an award of compensation by Referee Seidel, district No. 2, in the case of Mrs. Katie O'Shute, against the Lehigh Valley Coal Co., Wilkes-Barre, Pa., the Pennsylvania Workmen's Compensation Board makes an award of $6,895.17 to the claimant for herself and for four minor children, payments covering varying periods up to 300 weeks.

The claimant's deceased husband, Thomas O'Shute, was in the employ of the defendant company at its Packer No. 4 Colliery on Feb. 26, 1920, as a contract miner. With another employee he was in a manway preparing to discharge a shot of dynamite when water broke through from another part of the mine and he was carried down the chute into the gangway and his clothes were wet through. He walked to his home, a mile distant, and while on the way his clothes became frozen. The next day he worked until noon, when he complained of being ill and returned home. The next day a physician diagnosed his case as that of influenza pneumonia, of which he died March 5, 1920.

The opinion, written by Commissioner Benjamin Jarrett, finds that death was due to the wet clothes, which reduced the miner's vital resistance, and that the decedent met with the accident while actually engaged in the furtherance of the business of the defendent. The widow is awarded a total of $3,600 for the 300-week period and the remainder of the award is for the children, with the exception of $100 allowed for funeral expenses.

COMPENSATION FOR LOSS OF USE OF ARM DOES NOT PREVENT RECOVERY FOR SUBSEQUENT INJURY TO ARM—Commissioner Jarrett decides that Carlo Demuzio is entited to compensation for injury to an arm, though he had previously been awarded compensation when he lost the use of it in another accident. The opinion of the commissioner quotes the decision of Justice Trexler of the State Supreme Court rendered July 14, 1921, which said:

"To illustrate, a man may have lost the permanent use of his arm and nevertheless, if still able to work, be entitled to receive compensation for the time lost due to an injury subsequently occurring to the useless member."



Problems of Operating Men

Edited by James T. Beard

Cutting Pillars With Machines

The Advancing System of Working Coal Makes It Possible to Widen the Rooms on the Inby Side and Still Cut The Pillars on the Straight Rib Protected by the Solid Coal

AFTER reading the inquiry of J. D. Rogers, *Coal Age*, April 28, p. 757, and the discussion that followed later in regard to cutting the pillars with machines, allow me to describe briefly the method employed by the Lena Rue Coal Co., in their mines at Lena Rue, Kentucky.

The coal is mined on the advancing system of working, which makes it possible to widen the rooms inby. When drawing the pillars the machines start to cut on the rib side, which affords the men the protection of the solid coal yet to be worked. In other words, the cut is advanced in the direction toward the gob.

General Plan of Working

As shown in the accompanying figure, the main headings are driven four abreast, the two center headings being made the haulage road and intake airway, respectively. The cross-entries are driven on the butts and the rooms turned on one side only and driven up on the face of the coal.

A principal feature of this method of working consists in three pairs of cross-entries forming a panel. The first rooms in this panel are turned off the third entry, which is furthest inby. Robbing is started as soon as each room reaches its limit.

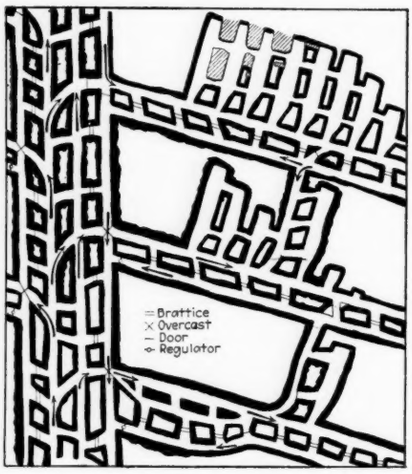
As the work advances, a haulway or cutoff is driven across from the second pair of entries to the third, for the purpose of cutting out the third entry and allowing the entry pillars and stumps to be drawn at the same time when the room pillars are drawn back.

Robbing Back the Pillars

As soon as the haulway cutting off a portion of the third entry is completed, the line of robbing is extended across these rooms and entries and they are closed, as indicated by the hatching in the figure. The coal from the remaining rooms is then hauled out through the cutoff to the second pair of entries. This will require some of the coal coming from the rooms outby being backswitched to the cutoff.

Later, a similar cutoff is driven from the first pair of entries in the panel to the second pair; and, as the work progresses still further, the line of robbing is extended across the second pair of entries and these are closed. All the coal is now taken out through the cutoff to the first pair of entries in the panel.

In this manner the work is advanced, until all the coal in that panel is recovered, when the entry pillars and stumps on the first pair of entries are drawn back. As far as possible, each room is started so that it will be driven up when the line of robbing crosses



THREE PAIRS OF BUTTS FORM PANEL

the room. This allows the pillars to be drawn back on the same steel by which the rooms are driven.

As previously stated, this arrangement permits the rooms to be widened on the inby side and affords every advantage to start the machine on the straight rib and work toward the gob. This seems to give the workmen a greater feeling of security than when cutting from the gob side of the pillar.

It is up to the foreman to use sufficient timber to properly control the breakline and insure the complete extraction of the pillars. It is customary in our mines for the engineering corps to make frequent visits to the section, and place a mark in each room as a guide for the foreman to keep the line of robbing straight.

In closing, let me say that the entire mine is ventilated on the same plan as that outlined in *Coal Age*, June 9, p. 1043, where the main entries are shown as driven four abreast. Each panel, consisting of three pairs of cross-entries, in our mine, is ventilated by a single split of air. Overcasts are built at the mouth of the first and second pair of cross-entries to conduct the return air over the haulage road, in each case. There is no overcast built at the mouth of the third pair of entries, because of these entries being closed in so short a time by the cutoff connecting them with the second pair of entries.

Fred Ross,
Harlan, Ky. Mining Engineer.

Pushing vs. Pulling Mine Car Trips

Cost of haulage increased when locomotive is pushing a trip of cars. Wheels hug the rails, spreading them apart, causing derailments and wrecks. More power is required than when pulling the trip.

REFERRING to the interesting question asked by Mine Foreman S. A. Bowes, *Coal Age*, June 30, p. 1165, my experience in mine haulage convinces me that the problem presented here should receive the careful consideration of all practical readers of *Coal Age*. It is one that involves either success or failure in the operation of the mine.

In general, let me say it is a decided disadvantage and never practicable to push a trip of loaded cars with a mine locomotive. I would advise this mine foreman not to undertake to follow such a practice.

In pushing a loaded trip of cars in a mine with a locomotive, the car wheels and flanges hug the rails more closely and bind, producing a much greater friction and rail resistance than when the locomotive is pulling the trip. The result is that more power will be required in the former case than in the latter; and more coal will be burned at the powerhouse for the same service in the mine.

Cost of Upkeep and Repairs Increased

In addition to these facts, it can be said that when a locomotive is pushing the cars the service is much harder on the machine, which means an increase in the cost of upkeep and repairs. Pushing a loaded trip has a tendency also to spread the rails when rounding a curve in the track. The strain opens the joints and tends to cause more frequent derailment of cars, by reason of broken rails and ties. It can also be assumed that the upkeep of the track will be greater, for the same reason.

Again, it will generally be found that there will be more coal wasted by falling from the cars along the track when the locomotive is pushing the trip than when the trip is hauled out of the mine.

Attention has already been called to the fact that when a locomotive is pushing a trip of cars the triprider is riding the front car and his signals cannot be seen by the motorman when the trip is rounding a curve. It may happen that slate has fallen on the track, or a car may be derailed, or the trolley wire may be down. In any case, the triprider is lucky if he escapes alive.

All mining men will agree that a wreck occurring when hauling a trip is a very costly proposition in respect to the loss of time, the expense of clearing the track and making the necessary repairs to the cars and perhaps retimbering the entry. The delay will cause the loss of several trips and, in the meantime, the men at the shaft bottom and on the tipple will be standing idle, which means a decrease in tonnage and increased cost of operation.

Estimating Weight of Locomotive Required To Handle Output

Making a few figures on this proposition, I find that, in order to handle an output of 2,400 tons of coal, in a shift of eight hours, with a single locomotive, assuming it is possible to make four trips an hour, it will be necessary to haul $2,400 \div (4 \times 8) = 75$ tons. This will require, say thirty-eight 2-ton cars and make the weight of the entire loaded trip, including the weight of the cars, say 120 tons.

Now, allowing for a drawbar pull of 30 lb. per ton, makes this pull $120 \times 30 = 3,600$ lb. or 1.8 tons. Then, estimating the weight of the locomotive resting on the drivers as 5 times the drawbar pull, the weight of locomotive required for this haulage would be 5×1.8 equals 9 tons.

In regard to the difficulty experienced in attempting to shunt the cars into the rotary dump when the locomotive is pulling the trip, let me suggest there should be provided a run-a-round track that would permit the locomotive to get behind the trip and push the cars into the dump. Or, perhaps the track can be raised so as to give a grade that would enable the cars to be run into the dump by gravity. OSCAR H. JONES.

Crawford, Tenn.

Working Under Surface Reserve

Where the operator owns the coal rights only, careful study must be made of the nature of the overlying strata and a method of working employed that will avoid damage to the surface.

WORKING coal under a surface reserve demands the taking of every precaution to prevent the roof breaking to the surface. The possibility of such an occurrence increases with a shallow cover and a comparatively thick seam of coal to be extracted. Like precautions must be taken in the mining of two seams of coal separated by a moderate thickness of intervening strata.

My attention has been drawn to this matter by the question discussed in *Coal Age*, May 5, p. 825, relative to a case where the operator owned the coal rights only. It has always been my practice, in such cases, to make a particular study of the nature of the overlying strata, before attempting mining operations.

In one instance, the seam of coal worked was overlaid with a good thickness of strong sandrock. My experience told me that to break this rock and avoid damage to the surface, would require the complete extraction of the coal over a very large area, unless effective measures were adopted to create a fall of roof as the face advanced.

Conditions That Control Mining in the Lower Seam of Coal

In the mining of a lower seam of coal that is separated from an overlying seam by but a few feet of strata, there is a limit to the extent to which operations can be pushed in the lower seam if the mining of the coal in the upper seam is considered from an economic standpoint

Every mining man knows that there must be no excessive costs for timber and deadwork, in the storing of refuse or building of walls to prevent the undue settlement of the overlying strata when the coal in a lower seam is being taken out. In all such cases, the conditions must be carefully studied if the cost of production is to be kept low.

Where the roof of the coal is of such a nature that it will not fall beyond a possible loose pothole the seam can be mined to the limit if care is taken to leave pillars of sufficient width to support the overburden in the first working. Care must also be taken in the later robbing of the pillars, in order to preserve a uniform breakline and insure a gradual settlement of the roof on the waste.

Study Conditions in the Strata

In any case, the method adopted must be worked out by a careful study of the conditions in the overlying strata, the depth of cover, thickness and character of the coal and nature of the roof and floor enclosing the seam. This is essential if the coal is to be worked on an economical basis.

In the issue of *Coal Age*, Mar. 10, p. 455, a proposition was presented regarding the working of two seams of coal separated by 40 ft. of a hard sandy shale. The discussion that followed recalled a somewhat similar circumstance, in the working of a coal seam lying five fathoms (30 ft.) below a seam that had been opened a few years previously.

In that case, a slope was driven from the upper seam to reach the lower coal. While the coal in the upper seam was 8 ft. thick, that in the lower seam was only 3 ft. in thickness. The intervening strata I would describe as being a strong blue-metal slate, after the nature of a soapstone. The room-and-pillar method was used to work the lower seam and bottom was taken up on the roads for headroom and gobbed.

Chocks, or cribs, set 4 ft. apart each way, in three rows, were used to support the roof. As the face advanced the back row of cribs was taken out and reset near the face of the coal. The only trouble observed was that the coal in the lower seam did not work as freely as it should; the obstruction in the upper seam appeared to rob the coal of its life.

Owing to the thinness of the lower seam, the working face advanced more rapidly and was soon abreast of that in the seam above. It was then decided to change the plan and drive the developing entries in the lower seam on the butts and work the rooms on the face of the coal, which was the reverse of the conditions in the seam above.

At given distances, new slopes were put down, from the upper seam to the lower one, for ventilation and haulage. The entire plan was very successful and few accidents occurred, practically all of which were due to negligence or carelessness on the part of some workman.

Gans, Pa. R. W. LIGHTBURN.

Guardrails in Room Switches

Guardrails should be avoided in laying a room switch, by using a No.-2 instead of a No.-1 frog.

REFERRING to the letter of an Indiana trackman, *Coal Age*, June 30, p. 1163, allow me to say that his suggestion of using guardrails in laying a room switch is wrong, in my opinion. The use of a No.-1 frog gives a very short turn. For a track gage of 3½ ft. the length of the leadrail is only 7 ft. when using a No.-1 frog.

Let me say that wherever it is possible, a No.-2 frog should be used in laying a room switch. This will give a 14-ft. leadrail and the turn will not be so short. When a guardrail is spiked to the ties at the latch, as shown in the sketch (p. 1163) there is every danger of its being torn out by the motor and cars passing over the switch.

My practice, which is quite common in this field, is to raise the outer rail of the track a few inches higher, at the point of switch. By doing this, there is seldom any trouble with cars leaving the rails. In no case would I use a frog number less than No. 1½. I much prefer using a No.-2 frog and setting the switch point 12 ft. back from the center of the room. TRACKMAN,

Bicknell, Ind. American No. 1 Mine.

Choosing a Rope-Haulage System

Choice of system will depend on grade of slope, length of haul and other conditions. Examples of successful installations now in operation.

THERE is not sufficient data given, in the inquiry of a general manager of a mine in Missouri, *Coal Age*, June 23, p. 1126, regarding the best system of rope haulage to be adopted, in a certain slope opening, to enable a reliable answer to be given to that question.

As stated in the reply to the inquiry, the choice of a haulage system must be guided by a careful consideration of all conditions. The adoption of an engine-

plane haulage is dependent on the grade being sufficient to enable the descending empty cars to drag the rope back into the mine. If the slope is too long and the grade too light such a system will not work correctly.

My opinion is that either an endless-rope or an engine-plane system will generally give better results than a tailrope haulage. An endless-rope system can always be used on a moderate grade, where another system could not be operated to advantage. As has been explained, an endless-rope haulage is well adapted to the handling of a large and uniform output.

LARGE QUANTITIES HAULED BY ROPE

In this connection, allow me to mention three mines that are hoisting from four to five thousand tons of coal daily with rope haulage. The Eleanora mine, in Jefferson County, Pa., operating a slope having a grade of 3 per cent, employs an endless-rope haulage, the cars being attached to the rope by a simple grip device that is easily adjusted.

The coal is brought to the slope bottom in trips carrying from 60 to 80 tons each. The cars, being attached to the rope at intervals, are drawn up the slope and over 1,000 ft. of outside tramway. Owing to the light grade, it is necessary in this mine to operate a small tailrope system in handling the empty cars.

The Adrian and Florence mines of the same company have similar conditions, but are able to use an engine-plane haulage for hoisting cars. It should be stated, here, that when the slope is so long that the empties fail to drag the length of rope back to the bottom where the trips are made up the trouble can be overcome by having a small locomotive meet the trip at a point a short distance up the incline and haul it back to the bottom.

Pikeville, Ky. GEORGE EDWARDS.

[In a brief letter, Oscar H. Jones, Crawford, Tenn., expresses a decided preference for the endless-rope system of haulage, where the conditions are favorable, but gives nothing new regarding the choice of a rope system other than the points already mentioned.—EDITOR.]

Accident Bulletins

Printed bulletins describing and illustrating accidents, stating the cause and explaining how the same might have been avoided, are urged as a means of preventing such happening again.

VARIOUS references to safety and means of preventing mine accidents, which have appeared recently in *Coal Age*, prompt me to offer a suggestion that I firmly believe will help mine foremen and other officials in their efforts to reduce the number of accidents in their mines.

It is generally agreed that, in order to decrease the number of accidents that occur almost daily, we must educate the worker in respect to the dangers surrounding him in his work and show him the safest way to perform his task. This must be done, however, without increasing the burdens already resting on the mine foreman and his assistants, which is often given little thought.

My suggeston is that each coal company appoint a safety committee charged with the duty of investigating all accidents, as soon after their occurrence as possible, with a view to placing the blame on the person to whom it rightfully belongs. This committee must report its findings to the superintendent, who should be authorized to have it printed in the form of a bulletin for distribution among the miners.

The bulletin should be written in a clear and simple way, giving the name of the unfortunate victim and explaining how, with proper care and caution, he could have avoided the accident and saved his life. If possible, the way in which the accident occurred should be illustrated in a manner that will bring it clearly before the eye of the reader.

Such bulletins would cost a few dollars it is true, but one accident prevented would pay for all the bulletins printed in a year. To be effective, a copy of each bulletin should be given to every mine worker and, if necessary, explained to him in a way that will set him to thinking.

Indirectly, the bulletin will bring to the mind of each man, accidents that have happened to others and which might have come to themselves. The idea is not new, it having been tried with various modifications, from time to time, by different companies and often, possibly, discontinued after a short time.

My experience is that, no matter how hard I tried to explain an accident to my men, there were always some who failed to understand its meaning to them. A bulletin would have been a great help to me in that respect and would have saved considerable time and effort and been better understood by most of the men.

All mine workers are prone to take chances, at one time or another. It is my belief that publicity and education will cause many a man to be more careful to avoid danger, both for his own sake and that of his fellow workers and for the sake of his family. If this is the case, the company will profit and lives will be saved.

Firmly believing that this idea if carried out conscientiously will produce good results, I hope to see it thrashed out in *Coal Age* and learn the views of others in reference to the practicability of such a publicity scheme.

Johnstown, Pa. SUPER.

Inquiries Of General Interest

Rock Slope Fills with Water

A 45-Degree Slope, 700 Feet Long, Filled with Water When Within 100 Feet of Workings Below. Plan to Drive Up From Bottom Is Proposed

KINDLY permit me to ask the advice of *Coal Age* and its practical readers in regard to the advisability of adopting a plan that we have had under consideration for a considerable time, but have hesitated putting into execution because of the difference of opinion expressed regarding its absolute safety.

The situation is this: For the purpose of handling the output of the mine to better advantage in respect to shipping facilities, a rock slope was sunk from the surface and had been driven down 700 ft., on an inclination of 45 deg. when the work had to be temporarily abandoned owing to labor troubles. In the meantime, the slope filled to the surface with water.

When work was again to be resumed, the company faced the problem of unwatering the slope. The place had been driven 14 ft. wide and 7 ft. high, and was estimated to hold, approximately, 513,000 gal. of water. There being ample pumps in the mine, it was thought practicable to tap this body of water from below and let the mine pumps handle it in the regular channel through a lower opening.

It was proposed to start below and drive up, on the line of the slope, as far as would be safe. The rock is a hard, solid slate. But the question that has been argued is what pressure does this weight of water exert at the foot of the present slope and how close we could approach with safety.

———, Ky. SUPERINTENDENT.

Our reply to this question is that the only safe plan to adopt, in this case, is to bale or pump out the water from the surface. The pressure exerted by the water on the face of the slope excavation is $(0.707 \times 700 \times 7 \times 14 \times 62.5) \div 2{,}000 =$ say 1,515 tons, or 215 lb. per sq.in., nearly, which is very unsafe to work under.

Assuming the slope track is in good condition, a large sheet-iron skip, say 10 ft. long and 3 x 4 ft. in section, should be constructed, having a clap-valve at its lower end, and mounted on a truck. Making an average of, say 10 trips an hour, this skip would empty

the slope in less than eight 8-hr. shifts. An 8- or 10-hp. engine would be ample for this service, hauling at the rate of 6 mi. per hour.

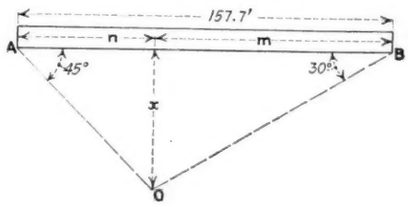
Truss Problem

REFERRING to the accompanying diagram, kindly show me how to calculate the distances m, n and x when the total length of the beam is 155.7 ft. and the two tierods BO and AO make an angle with the chord AB of 30 deg. and 45 deg., respectively.

Hazleton, Pa. STUDENT.

There are several methods of solving this problem, but probably the simplest is the following:

The tierod AO, making an angle of 45 deg. with the chord AB, the distance x is equal to the distance n. Again, the tierod BO, making an angle of 30 deg. with the chord AB, its length BO is twice the distance x, or $2x$; and, since the cosine of 30 deg. is 0.866 the distance m, measured on the chord, is $2x \times 0.866 = 1.732x$.



Then, since the sum of m and n is 157.7 ft., we write

$$x + 1.732x = x(1 + 1.732) = 157.7$$
$$2.732x = 157.7$$
$$x = 157.7/2.732 = 57.7 \text{ ft.}$$

Therefore, $n = x = 57.7$ ft., and $m = 157.7 - 57.7 = 100$ ft.

Examination Questions Answered

Bituminous Mine Inspectors' Examination Pittsburgh, Pa., March, 1921

(Selected Questions)

QUESTION—*In what seasons of the year and why are dangers from coal dust to be expected, and to what extent would you allow coal dust to accumulate or be deposited before considering it dangerous?*

ANSWER—The danger from the accumulation of dust in a mine is greater in the winter season when the outside air has a lower temperature than that of the mine. The result is that cooler air entering the mine has its capacity for absorbing moisture increased when its temperature is raised in the mine workings. This has the effect to absorb large quantities of moisture in the workings and dry out the mine, making it dusty and dangerous to a greater extent than in the summer season when these conditions are reversed.

An inspector or other mine official should never permit an avoidable accumulation of dust at the working faces or on the timbers, sides, roof and floor of the roads and airways throughout the mine. Every means should be adopted to avoid the dust being carried in suspension in the air current passing through the mine.

QUESTION—*(a) Give the most essential features of a good safety lamp; (b) When and where would you consider their use necessary? (c) Which do you prefer and why?*

ANSWER—(a) The essential features of a good safety lamp, for working, are the following: The lamp must give a good light, diffused at a broad angle upward on the roof and downward on the floor. The lamp must be simple in construction, of few parts and strong to withstand rough usage. It should be light and portable. The gauze chimney should be protected by a steel bonnet to exclude the dust and protect the flame from any sudden rush of air. The combustion chamber should be surrounded by a strong glass cylinder. Air should enter the lamp at a point below the flame to reduce the tendency to smoke to a minimum. A good pricker should be inserted in the lamp, or other means provided to raise and lower the wick and remove any crust that may form on the wick and impair the light. A good working lamp must not be too sensitive to gas.

(b) Safety lamps should be required whenever the condition of the mine air in any working place becomes explosive or inflammable, either from the presence of dust or gas. Where safety lamps are required to be used in any section or portion of a mine no open lights should be permitted elsewhere, except by the drivers on the main intake haulage road. Otherwise, the mine should be worked exclusively with safety lamps or equipped with electric cap lamps.

(c) Several types of working lamps have been approved by the Federal Bureau of Mines and a preference for one or the other will depend largely on the user of the lamp.

QUESTION—*How would you render first-aid to a victim of (a) asphyxiation from afterdamp; (b) asphyxiation from blackdamp; (c) suffering from powder burns? (d) suffering from electrick shock?*

ANSWER—(a) Remove the person promptly to fresh air if that can be quickly done. Loosen the clothing about the neck and chest. Place the man on his back on the ground with a coat or other bundle under his shoulders to elevate the chest. Turn the head to one side and see that the tongue is drawn forward so as not to obstruct the air passages in the throat. Proceed at once to give artificial respiration and continue this until there are signs of returning life or the person is pronounced dead by a physician. Keep the person warm with a dry coat or blanket to cover him. At the first signs of returning life, assist the circulation by rubbing the limbs toward the heart. When breathing has been restored put the patient to bed, giving no food other than hot beef tea or a drink of hot coffee.

(b) The same treatment applies also to asphyxiation by blackdamp.

(c) Burns from powder, flaming gas or electricity must be promptly treated by applying a thin paste of bicarbonate of soda (baking soda), starch or flour to exclude the air. Vaseline, lard, cream, olive or castor oil are all good. Deep burns require the prompt attention of a physician.

(d) For electric shock, if the person is unconscious when removed from contact with the wire proceed to give artificial respiration and treat in the same manner as for asphyxiation by gas.

QUESTION—*A circular airway is 9,026 ft. in diameter and 1,000 ft. long; what is the rubbing surface and sectional area?*

ANSWER—The perimeter of this airway is $9.026 \times 3.1416 = 28.356$ ft.; and the rubbing surface is therefore $28.356 \times 1{,}000 = 28{,}356$ sq.ft.

The sectional area of the airway is $0.7854 \times 9.026^2 = 63.985$, say 64 sq.ft.

QUESTION—*Would it be an advantage or a disadvantage to connect the underground workings of two or more mines generating explosive gases? What dangers are most likely to occur?*

ANSWER — The chief advantage of connecting adjoining workings is that it provides another avenue of escape in case of accident blocking other roads and traveling ways. The opening between the workings of mines operated by different companies affords an easy way to connect the surveys and prevent any error in establishing the boundary between the properties and avoid dispute.

The disadvantages of such a plan are many. The ventilation is not under as good control. One of the mines may be drawing on the circulation in the other. Each mine is subject to accident by flooding in the other workings. The opening between the two mines, unless carefully guarded, permits access to either, making it possible for the men to visit and affords opportunity for pilfering tools and other supplies, causing discord and trouble and interfering with the discipline in each mine. Either mine may suffer by reason of the gas generated in the other workings.

Edwin Ludlow Defends Centralized Purchase of Railway Fuel

IN THE *Coal Age* of July 14 there appears an editorial under the caption of "Stabilization at a High Price," in which the proposition for better co-operation between the railroads and the coal miners was brushed aside on the sole ground that centralization of railroad coal purchases would be too high a price to pay for the stabilization.

In its opening sentence it says "Let the railroads stabilize the bituminous coal industry, is the scheme proposed by Edwin Ludlow before the Committee on Interstate Commerce of the Senate, in the hearing on the railroad situation." It would have been much fairer if this had read "Let the railroads do their fair share towards stabilizing the coal industry and reduce at the same time their own fuel costs."

The proposition that was brought before the Senate Committee on Interstate Commerce was made at the request of the Board of Engineering and Economics appointed by Mr. S. Davies Warfield, president of the National Association of Owners of Railroad Securities, and the object was to show to the Senate Committee the advantages and economies that could accrue through the grouping of various railroad systems that are now more or less competitive. These advantages are not imaginary but are based upon the railroads as a whole attaining the same economic results that certain railroads now have, due to their scientific method of purchasing.

To approach the situation properly a broad conception of the national fuel problem should be called into existence and it must be considered that until 1917 fuel was so cheap and apparently so plentiful that a scientific study of necessities of economies in its use was not considered as imperative as it is now, when the cost of fuel is from two to three times the pre-war price and with very little possibility of it ever selling at the low price prevailing before 1917. It is recognized that we no longer have fuel reserves of cheap coal and for the future must face a higher cost and, to do so, a scientific study should be made of the proper purchase of the coal for the most economical results. Some railroads have fuel agents that are carefully studying the subject but in the majority of cases, the fuel purchases are handled through the purchasing agent, who buys the coal as he buys other supplies—either taking what appears to him to be the cheapest, or else buying some special quality of coal that his operating men consider essential for use on their divisions.

It is necessary for the protection of the owners of railroad securities that every possible economy should be put into effect to avoid the taking over of the railroads by the Government, as will undoubtedly occur if interest on their bonds and stocks cannot be earned. The point emphasized in the statement was the possibilities for increased earnings to the railroads, and reduced fuel costs, by purchasing and storing during the summer at least 50 per cent of their consumption during the winter months, when transportation costs are the highest and when there is a demand for domestic fuel that would keep all their equipment thus released actively engaged in revenue producing freight. Secretary Hoover and Chairman Clark of the Interstate Commerce Commission have both urged the railroads to stock coal in summer and it was hoped that the railroad executives who were present at the hearing would see the importance of co-operation with the coal miners in their fuel purchasing.

The editorial gives the advantages enumerated, but states that the plan contemplates "no advantage to the railroads that are not already within their reach." This is perfectly true, but the fact is that with the exception of a very few railroads, those advantages, as enumerated, have never been reached by the railroads of the country. This the editorial also accepts when it states that "many now do it without the overseeing eye of a super purchasing agent." This is also perfectly true, and the object of presenting it before the Senate Committee was to show that the advantages now accruing to a few railroads and to the few coal mines with which they deal, could be extended all over the country if the methods of purchasing the fuel were placed on the same scientific and co-operative basis that is now being employed by these few railroads that are taken as an example of what can be done when the knowledge of how to do it is possessed by the parties in control of the purchasing of fuel.

It would appear that a paper such as *Coal Age*, supposed to be dedicated to the best interests of the coal business, would at least offer constructive criticism of a plan that confessedly goes towards stabilization of the industry, and against which the only objection advanced is the possibility of too much power being placed in the hands of one man in the purchasing of fuel for a group of roads rather than for one line only. It eliminates the psychological fact that large responsibilities bring almost automatically a wider vision; and the very necessity of dealing in such large tonnages as would be required in the purchasing of fuel for a large group of roads would in itself eliminate the methods that have been only too often adopted by some of the purchasing agents who felt that their only responsibility was in purchasing coal at a lower cost than anyone else, irrespective of the fuel cost of this coal when figured on the basis of the number of B.T.Us. in the dollar delivered on the locomotives.

During the year 1920 the fuel consumption by the railroads of bituminous coal amounted to 155,343,635 tons at a cost of $641,224,469. This amounts to over 25 per cent of the entire output of our bituminous mines. The railroads are further interested in the coal industry from the fact that they hauled 488,730,051 tons of coal and coke during the same year, amounting to 39.57 per cent of their entire freight business. The railroads as an industry are directly concerned with the prosperity of the coal business, and it is certainly the duty of the railroads, as well as to their financial advantage, to do everything in their power to stimulate the industry which produces the largest percentage of freight traffic, and not consider only the cost of the coal to themselves as fuel.

All that is required to solve the problem is a broader conception of the magnitude of the problem on the part of the men who own and operate the railroads. With this, and a desire to apply constructive remedies, much can be accomplished.

EDWIN LUDLOW,
New York, Aug. 9, 1921. Consulting Mining Engineer.

British Columbia Coal Production 9,234 Tons Less in June Than in May

PRODUCTION of coal in British Columbia in June was 182,827 tons, compared with 192,061 tons in May, a decrease of 9,234 tons. The Crow's Nest Pass Coal Co. recorded increases both at Coal Creek and at Michel, but a decrease at Corbin. On Vancouver Island there was a drop in the production of every colliery. In the Nicola-Princeton section there is little difference except in the case of the Coalmont Coal Co., which has not been producing, having been engaged in completing the installation of a plant. Coal now is being taken out on this property, however, and the mine may be expected to figure as a shipper during the present month.

Seven mines on Vancouver Island reported the production of 119,193 net tons, two mines in the Nicola-Princeton district, 9,957 tons, and three mines in the Crow's Nest Pass field, 53,677 tons.

The Provincial Government reserve on the coal lands has been removed, an order in council being passed to this effect in the course of the past few weeks. The withdrawal of restrictions in respect to the staking of coal applies to all parts of British Columbia, with the exception of the east coast of Vancouver Island and the Groundhog and Peace River districts. The action of the government is not expected to have much effect on the coal situation. The east coast of the island already is well staked, the Groundhog district in northwestern British Columbia is without transportation, and the Peace River is similarly placed. The reserve was criticised on the ground that it discouraged prospecting. If its removal to the extent indicated has the effect of stimulating the search for new fields it will, in the opinion of mining men, prove a good thing.

THE RAILROADS CAN'T OBTAIN their objective merely by charging.—*Norfolk Virginian-Pilot*

How the British Department of Overseas Trade Functions*

EVERY nation having overseas trade interests inevitably is brought face to face with three questions of policy:

(1) Shall the collection of trade information and the work of trade promotion be handled by the Foreign Office (diplomatic) so that the *foreign policy* shall be entirely in the hands of one department? Or

(2) Shall trade information and trade promotion be considered solely a matter of *commercial policy* to be placed in the charge of the Board of Trade (government commercial department) so that *commercial policy* abroad as well as at home shall be unified and dictated by one department? Or

(3) Shall some compromise be effected whereby both diplomatic and commercial interests are effectively served?

Those who have been following with interest the efforts of Secretary Hoover to vitalize the Department of Commerce and to make it an aid to industry will be interested in this description of how the business men in England have come together with their government for the common purpose of promoting the trade that is the life of industrial activity and the first essential of prosperity.

The British Government has adopted a plan along the lines of this last suggestion, and a coalition has been effected between the diplomatic and commercial departments resulting in the Department of Overseas Trade (Development and Intelligence). The new department is like the electric wire which carries several telegraph and several telephone messages at the same time. It is a channel for the simultaneous flow of information on all commercial, diplomatic and other foreign matters. A child of two parent organizations, the Board of Trade (commercial) and the Foreign Office (diplomatic), it is equally responsible to both, drawing its commercial policy from one and foreign policy from the other, that is, the government.

A joint memorandum by the Board of Trade and the Foreign Office, on Jan. 24, 1917, described the control of the department and its relations to the two parent organizations in the following language providing, it will be noted, for a unification of interests that have at times in the past worked at cross purposes.

"Parliamentary control over the department will be exercised through a new Parliamentary Secretary at the Board of Trade, who is also additional Parliamentary Under-Secretary for Foreign Affairs. This Parliamentary Secretary will be responsible to the President of the Board of Trade for all matters within the competence of that department, and responsible to the Secretary of State for Foreign Affairs for all matters concerning the Foreign Office.

"It is believed that these proposals afford a satisfactory solution of a problem which for some years past has been urged on the attention of His Majesty's Government by the commercial and industrial community. Their criticisms have been especially directed against the duality of the existing system, under which, while the direction of the commercial attaché and consular services rests with the Foreign Office, the utilization of the fruits of their commercial work lies with the Board of Trade. Under the new scheme the direction of the commercial work of the foreign services and the distribution of the intelligence collected by them will be dealt with by a single department, and as the same department will also direct the Trade Commissioner service within the Empire, uniformity of policy will be secured in respect of overseas trade as a whole."

This unique departure in foreign trade promotion has now been operating for four years. The surest evidence that it is popular with the government and business men is the increasing amounts which the government has been willing to pay for its continuance and expansion, as shown by the following table:

Year ending		Year ending	
March 31, 1919	£124,688	March 31, 1921	£394,899
March 31, 1920	£290,010	March 31, 1922	£488,946

Approximately 50 per cent of the increase between 1919 and 1922 is due to the transference of funds when personnel and functions were taken over from other government departments, thus concentrating all overseas trade activities in this new department. This year's appropriation provides for a personnel of 766 including secretaries.

The British mind has a particular fancy for specialization in matters of government and business, with the result that this vigorous young department has two bodies of specialists—those concentrating on a study of the peculiarities of trade of individual countries and those promoting the overseas interests of each trade and industry in this country. This effective form of organization is comparable to a strong textile—the geographic specialists constituting the warp and the trade specialists the woof. When well woven (as it is in this case) it should form a very substantial scheme and be proof against leaks or breaks.

Effective contact with the business man has been especially stressed, and the trades specialists of the department have been brought together specifically for this purpose. This group is composed of thirty-five technical experts and tradesmen, each of whom has been selected on account of his knowledge of some particular industry. For example, this division has a building materials expert, several textile experts, a trades specialist on glass and pottery, another on electrical machinery, etc., thus including all the principal industries. Periodic trips are made by these men to the principal trade centers of each industry, so that they are able to represent the views and wishes of their clients in the councils of the department and in giving more accurate direction to overseas activities.

Another division, called the foreign division, is divided along geographical lines, each section making a special study of the markets of one or more countries of similar characteristics. There is a diplomatic division of the Foreign Office concentrating on diplomatic questions in exactly the same countries as the commercial divisions of the Department of Overseas Trade, thereby providing the basis for a most excellently organized liaison between the commercial and diplomatic corps.

Thus there are three co-operating groups, the foreign commercial, the foreign diplomatic, and that of the domestic trades, the foreign departments concentrating on the overseas markets and the trades section keeping thoroughly posted as to the foreign trade requirements of each home industry.

An inquiry comes in having to do with the boot and shoe trade in Argentina. The Latin American division will handle it in case it is a matter of regular trade work, but should there be any question of a special or technical nature the boot and shoe trade specialist is called in. He may either simply advise or he may take over the matter and handle it. Should there be any question of a diplomatic nature in connection with it the Latin American division will send a man over informally to discuss the situation with the Foreign Office. Frequent contracts of this kind would naturally be essential in any satisfactory scheme of

*From *Anglo-American Trade*, July, 1921.

co-operation between diplomatic and commercial departments, or any other government departments for that matter.

With the exception of the diplomatic corps, all foreign representatives of the British Government are under the direction of the Department of Overseas Trade. These include commercial secretaries, consular officers, trade commissioners and trade correspondents. The commercial secretaries are accredited to all the principal foreign countries, and are attached to the embassy or legation similarly as are the diplomatic secretaries. In order better to coordinate the commercial work abroad, the consular officers have been placed under the supervision of the commercial secretary in all matters of a commercial character. On other questions the consuls report direct to the Department of Overseas Trade in London. This arrangement makes the commercial secretary the government officer directly responsible for commercial work in that country, subject, of course, to the direction of the ambassador or minister.

The trade commissioners are engaged in the work of trade intelligence and promotion within the confines of the Empire. They are assisted in this work by trade correspondents who are business men located in large commercial centers, and who devote a part of their time to official commercial correspondence.

Distribution of Commercial Information

Apart from answering trade inquiries on specific subjects, the department devotes special attention to the dissemination, as rapidly as received, of all commercial information coming into its possession. Information of a general and non-confidential character is conveyed to the commercial community through the medium of the *Board of Trade Journal*, which records the activities not only of the department but also those of the Board of Trade. Advance or special trade reports are sometimes, however, of such a nature that general publicity is undesirable, and for the distribution of such information two channels have been established, one known as the "Special Register" and the other as "Form K."

Information too confidential in its nature for general publicity is communicated directly to manufacturers and exporters subscribing to the Special Register. This information includes specific openings for the sale of goods in overseas markets, foreign competition, industrial developments and notes on general commercial conditions existing in particular markets.

"Form K" covers the supply of the main preliminary particulars which firms engaging in export business with buyers abroad wish to know, communicated to the department by its overseas officers. It is intended that this scheme shall cover all possible importers of goods of British manufacture in foreign countries whose financial standing appears to be sound. Particulars are given of the goods which the firm reported on imports, the general nature of its business, and the name of its agent in the United Kingdom. This class of information is made available to the trading community through the medium of the Association of British Chambers of Commerce, the Federation of British Industries and certain other trade associations.

Another division is concerned with the administration of the Overseas Trade (Credits and Insurances) Act, 1920. This act sanctions the allocation of a sum of £26,000,000 sterling to finance British trade with various European countries. The act has now been extended to include certain other countries within the British Empire.

The Exhibitions and Fairs Branch of the department is well organized, and makes a specialty of the British Industries Fair, which is held annually. This branch also assists in the promotion of the numerous fairs which are held at home and abroad. The chiefs of the fairs section devote their entire time to a study of this subject, and make it a point to attend important exhibitions so as to be fully posted on all new developments.

The Foreign Samples Exhibition, which is housed in London, was developed during the war so as to post British manufacturers on enemy products which they might undertake to manufacture. This exhibition has been extended so as to make it possible for the government to send samples or catalogs of the products of merchants and manufacturers of various competing countries to the commercial centers in the United Kingdom particularly interested, so that manufacturers and merchants may better understand the competition abroad. As an example, there was recently shown at Leicester a complete exhibit of boots and shoes that are being sold in Scandinavian countries today.

Interest in the Department of Overseas Trade (development and intelligence) is redoubled at this time owing to the commercial mission of the department, which has left for Russia. This trade group is to be permanently located in Moscow, and will seek to promote trade between the two countries.

Instead of the usual procedure whereby the Foreign Office carries on negotiations through diplomatic channels, the Board of Trade handled the re-opening of relations with Russia, thereby indicating the growing recognition of the exceptional importance of economic relations between nations.

With an eye to further building up contact with its business clients, the department has now formed an advisory committee of twenty business men representing geographical and trades sections of the community, which meets every month to advise the department in its work.

During the four years of its life the Department of Overseas Trade has thrived in most extraordinary times. The war made 1918 an abnormal year for business, and the succeeding years have been occupied with a sudden boom and quick reaction, so that this new department has not as yet had an opportunity to operate in a normal period of business activity.

In a recently issued handbook the department briefly describes its policy and aims as follows: "To give British firms, free of charge, the live information and the help which they need in export trade. Its daily routine is moulded and stimulated by continuous contact with commercial men of every rank and class." In short, the Department of Overseas Trade exemplifies *new* British business; the new spirit in business; *better* business and *more* business.

Twelve Mingo Mine Workers' Leaders Are Arrested for Unlawful Assemble

HAVING disregarded the warning of Major T. B. Davis, acting adjutant general of West Virginia, in charge of the enforcement of the first and supplemental martial law proclamations of Governor E. F. Morgan in Mingo County, Davis S. Robb, international financial agent of United Mine Workers of America, who has had the attempted strike in the Mingo region under his direction for a year or more, together with eleven other leaders of the United Mine Workers of America were arrested on July 8 while in session at union headquarters in a hotel at Williamson, W. Va., and were placed in the Williamson city jail but were later removed to the county court house.

The charge against them was that of unlawful assembly, as forbidden in the Governor's proclmation of martial law. Those taken into custody at the sa metime as Davis S. Robb were: John W. Brown, Jasper Metzer, Herbert Halls, Robert Gilmore, international organizers of the United Mine Workers; Edward Dobbins, international board member; Henly Koop, Whitsell Hackney, J. B. Williams, Claude Mahoun, Charles Lee and J. H. Reed.

Up until July 9 no special effort had been made so far as could be learned to obtain the release of the union men, but there was a rumor in circulation that an attempt would be made to obtain writs of habeas corpus just as had been done in the case of A. D. Lavinder who had been arrested under the provisions of the Governor's first proclamation of martial law.

THE EXECUTIVE COMMITTEE of the American Wholesale Coal Association will meet in Chicago Aug. 24. Among other things a decision will be reached as to the details of the conduct of the traffic department which the association has decided to establish.

Proposed Classification of Coals Consists of 35 Types Divided Into 9 Grades

ATTEMPTS to pool coals during hte war revealed the lack of a satisfactory detailed classification. To meet this need, George H. Ashley, then chief of the Section of Eastern Coal Fields of the U. S. Geological Survey, now State Geologist of Pennsylvania, began a comprehensive study of the subject and presented a first draft of a plan at Chicago in September, 1919, before the American Institute of Mining and Metallurgical Engineers. Constructive criticisms of the first paper and continued study have led to a revised scheme, here presented in skeleton form.

The scheme seeks to divide all known coals into classes and types, so that coal of any given type and grade from anywhere may be substituted in use for any other coal of the same type and grade, and guaranteed to render essentially the same duty or service.

This involves, first, dividing all coals into kinds or types, and second, dividing each type into as many grades as the market demands. The scheme, which avoids the use of ultimate analyses, divides all solid fuels into thirty-five types, and each type into nine possible grades—315 in all. In dividing all coals into classes and types seven characters are considered which affect the behavior of coal in handling and burning: (1) Texture or structure; (2) fuel ratio (fixed carbon divided by volatile matter); (3) fixed carbon-moisture ratio (fixed carbon divided by moisture as received);* (4) caking or non-caking character; (5) xyloid (woody) or canneloid character; (6) weather resisting or non-weather resisting character; (7) certain coals are distinguished because highly oxidized, as revealed in their low heat value in the ash-, sulphur- and nitrogen-free condition. No previous classification has attempted to consider all of these characteristics.

But the actual service of coal depends also in its grade—that is, on the mount of dead matter or ash it carries, or (for certain uses) the amount of sulphur and on the fusing point of the ash (which materially affects the practical heat value). To express these differences it is proposed to use X, Y, Z to designate best, medium and poorest grades, as follows:

TABLE TO EXPRESS GRADES OF COAL

Ash	Sulphur	Fusing Point of Ash
X—Less than 8 per cent	Less than 1 per cent	Over 2,700° F.
Y—8 per cent—16 per cent	1 per cent—2 per cent	2,700°–2,400° F.
Z—Over 16 per cent	Over 2 per cent	Under 2,400° F.

It is proposed that the three letters be used in order to express the grade, e.g.: XXX means less than 8 per cent ash, less than 1 per cent sulphur, fusing point over 2,700° F., the first letter always standing for ash, the second for sulphur, and so on.

For example, an open-hearth steel furnace may call for Hivol A ZXZ coal, meaning a coal having a fuel ratio

*Recent work by the U. S. Bureau of Mines—Technical Paper No. 113—shows that hygroscopic differences of different kinds of coal are fundamental.

Key to Texture	Key to CLASSES	Key to GROUPS		Key to TYPES: Fix Carb / Vol mat.	Fix Carb / Moisture		Typical areas from which coals come	Code Numbers	Analyses, as recieved, but recalculated to 6% ash: Moisture Range	Moisture Aver.	Volatile Matter	Fixed Carbon	Ash	B.t.u.
Foliated	GRAPHITE					Graphite	*Rhode Island*							
Cellular	CARBONITE					Carbonite	*Midlothian, Va.*							
Compact	*Fuel ratio>7* ANTHRACITES			*10+*	*10+*	Anthracite A	*Wyoming Valley, Pa.*	1	<4	3	5	86	6	13,700
				7-10	"	" B	*Bernice, Lykens, Pa*	2	<4	3	9	82	6	13,850
	Fuel ratio<7 BITUMITES (Bituminous coals)	*B.t.u. (Ash, S. & N. Free) > 14,300*	*Caking types* "BITUMINOUS COALS" (Typical)	*Fuel ratio: 7-2.5* LOVOLITES ("Low volatile coal")	*5-7*	"	Lovol A	*Merthyr, S. Wales*	3	<4	3	13	78	6	14,500
					3.5-5.	"	" B	*Windber, Pa., Poca. W.Va.*	4	<4	3	17	74	6	14,650
					2.5-3.5	"	" C	*New River, W.Va. Clfd. Pa.*	5	<4	3	22	69	6	14,250
				Fuel ratio: 2.5-1.85 MIDVOLITES	*1.85-2.5*	"	Midvol	*Connelsville, Pa.*	6	<4	3	27	64	6	14,000
				Fuel ratio: 1.85 HIVOLITES ("High volatile coals")	*1.4-1.85*	"	Hivol A	*Pittsburg, Pa.*	7	<4	3	33	58	6	14,000
					1.4-1.85	*6-10*	" B	*Henryetta, Okla.*	8	4-8	6	35	53	6	13,000
					Under 1.4	*10+*	" C	*Belmont Co. Okla.*	9	<4	3	40	51	6	13,400
					" "	*6-10*	" D	*Hocking Co. Ohio*	10	4-8	6	39	49	6	12,750
					" "	*4-6*	" E	*St Clair Co., Ill.*	11	8-12	10	38	46	6	12,000
					" "	*2-4*	" F	*Sangamon Co., Ill.*	12	>12	14	37	43	6	11,250
			Non-caking types SPLINTS AND CANNELS	*Xyloid (woody)* SPLINTITES ("Splint" and "Block" coals)	*1.4-2.0*	*10+*	Splint A	*Coalburg, W.Va.*	13	1-3	3	35	56	6	13,750
					Under 1.4	*6-10*	" B	*Kenilworth, Utah*	14	3-6	5	40	49	6	12,500
					" "	*4-6*	" C	*Brazil, Ind.*	15	10-15	13	34	47	6	11,750
					" "	*2-4*	" D	*Mendota, Mo.*	16	15-20	17	35	42	6	11,000
				Canneloid SEMICANNELITES ("Lean cannels")	*2.5-5*	*10+*	Semicannel A	*Clearfield Co. Pa.*	17	<10	3	21	70	6	14,250
					1.4-2.5	"	" B	*Armstrong Co., Pa.*	18	<10	3	36	55	6	14,000
					1.0-1.4	"	" C	*Canfield, Ohio*	19	<10	3	42	49	6	13,400
				Fuel ratio <1 CANNELITES (Cannel coals)	*0.5-1.0*	"	Cannel	*E. Kentucky*	20	<10	3	53	38	6	13,500
					Under 0.5	"	Boghead	*Boghead, Ky.*	21	<10	3	64	27	6	
		B.t.u. (Ash, S. & N. Free) < 14,300	*Weather resisting* MONTANITES			*10-6*	Montanite A	*Sand Coulee, Mont.*	22	4-8	7	31	56	6	12,000
						6-4	" B	*Bridger, Mont.*	23	8-12	10	35	49	6	11,500
						4-2	" C	*Maxeymine, Mont.*	24	12-18	16	35	43	6	10,500
			Non-weather resisting SUBBITUMITES (Subbituminous coals)			*5-3*	Subbituminous A	*Gallup, N. Mex.*	25	9-15	12	39	43	6	11,600
						5-3	" B	*Hanna, Wyo.*	26	9-15	13	39	42	6	11,000
						3-2	" C	*Kirby, Wyo.*	27	15-20	17	37	40	6	10,250
						2-1.5	" D	*Sheridan, Wyo.*	28	20-25	22	34	38	6	9,400
						1.5-1.0	" E	*Inez, Wyo.*	29	25-30	27	32	35	6	8,750
Fibrous woody or earthy	*Non-surficial* LIGNITES	*Xyloid*				*1.0-*	Lignite A	*Wilton, N.D.*	30	30-45	37	29	28	6	7,000
		Xyloid & canneloid mixed				*1.0-*	" B	*Hoyt, Tex.*	31	30-40	35	29	30	6	7,500
		Canneloid				*1.0-*	" C	*Camden, Ark.*	32	30-40	35	41	18	6	
	Surficial PEAT	Air dried						*Orlando, Fla.*	33	10-80	20	52	22	6	8,000
		Fresh						*New Haven, Conn.*	34	80-94	90	7	2.5	.5	800
	WOOD	Dry Seasoned							35	15-30	25	74 55.5	25. 18.75	1 .75	8,600

Type characters in italics, <=less than, >=More than

PROPOSED CLASSIFICATION OF COALS

of between 1.4 and 1.85, a fixed carbon-moisture ratio of 10 or more, a sulphur content of less than 1 per cent, but with indifference as to ash and fusing point of ash. Criticisms and constructive suggestions are invited.

Anthracite Shipments Decrease in July

THE shipments of anthracite for July as reported to the Anthracite Bureau of Information in Philadelphia, amounted to 5,462,760 gross tons as compared with 6,031,937 tons in the preceding month, and with 6,389,100 tons in July, 1920. The falling off in shipments last month is attributed principally to the continued slack demand for pea and steam sizes which has caused the closing down of a number of individual operations, and to a not inconsiderable idleness from petty strikes affecting chiefly the Lehigh and Wyoming regions.

Shipments in gross tons by originating carriers were as follows:

	July, 1921	June, 1921
P. & R.R.W.	1,039,078	1,157,738
L. V. R.R.	946,387	1,069,521
C. R.R. of N. J.	507,942	571,213
D. L. & W. R.R.	926,850	1,009,119
D. & H. Co.	691,132	763,893
Penna. R.R.	384,780	441,693
Erie R.R.	619,365	555,882
N. Y. O. & W. R. W.	110,605	163,742
L. & N. E. R.R.	236,621	299,136
	5,462,760	6,031,937

Shallmar Coal Classification

A CLASSIFICATION of coal, prepared and issued in June by Wilbur A. Marshall of W. A. Marshall & Co., of New York, and copyrighted under the name of the Shallmar Coal Classification, is reproduced below. In the literature accompanying the outline it is noted that the value of this method is in the descriptive features which enable consumers to readily select coals best adapted to their particular requirements. A uniform method of sampling is described and consumers urged to test the coal they receive and to submit the analyses to the coal company for checking up mine performance. It is understood this classification was developed to replace, so far as possible, the indefinite Tidewater Exchange classifications.

Lit Cigarette; Lost Arm; Is Compensated

AN APPEAL of the Newton Coal Co., of Philadelphia, from an award of compensation to Antonio Masulewick, also of Philadelphia, was dismissed by the Workmen's Compensation Board, the findings of fact and conclusions of law of Referee Graham, District No. 1, being affirmed.

The claimant in this case was employed as a laborer and was engaged in loading coal into wagons. One wagon had just been loaded and while the claimant was waiting for another wagon he took a cigarette from his pocket and lighted it and threw away the match. In some unexplained way, either the cigarette or something in the coal pile exploded, injuring the claimant's left hand. The referee awarded compensation, and the defendant appealed, alleging two errors of law: (1) That the injuries were not received by accident in the course of employment; (2) that the injuries complained of were caused by a third person because of reasons personal to him.

The opinion of the board, written by Commissioner Paul W. Houck, states: "There is absolutely no evidence that the explosion was caused by the act of a third person, the only intimation to this effect being that the cigarettes were given to the claimant by his brother-in-law, who worked in a glycerine factory. Nor is there any doubt that the accident happened while the claimant was in the course of his employment. There is no error in the referee's award."

Commissioner Houck also dismissed a similar appeal in the case of Rocko Nany, of Forestville, near Minersville, Pa., against the Buck Run Coal Co. The defendant appealed from an award of compensation by Referee Seidel, District No. 2, but the board affirmed the findings of fact and conclusions of law of the referee.

THE BUREAU OF MINES is in urgent need of two new mine-rescue cars. One of these cars is needed to replace the car which was burned. It would be assigned to the Vincennes (Ind.) district. There is urgent need for the replacing of one of the old wooden rescue cars now in service. This car is an old Waggoner car, which was made over for the purpose. It has been in service thirty-five years. Railroads are objecting to its movement on fast trains. In case of mine accident, it is essential that the car be moved on the fastest train available.

LOW VOLATILE Run of Mine — Under 20%		MEDIUM LOW VOLATILE Run of Mine — 20% to 27%		MEDIUM HIGH VOLATILE Soft Structure Run of Mine — Over 27%		HIGH VOLATILE STEAM Lumpy Hard Structure Coals — Over 32% Volatile			ILLUMINATING GAS, BI-PRODUCT, AND METALLURGICAL COAL Hard Structure — Westmoreland & Youghiogheny Over 34% Volatile			ILLUMINATING GAS, BI-PRODUCT, AND METALLURGICAL COAL Hard Structure — Fairmont Over 36% Volatile			CONNELLSVILLE COKING COAL Run of Mine — Over 32% Volatile	
						Run of Mine	¾" Scre'd		Run of Mine	¾" Scre'd		Run of Mine	¾" Scre'd			
Class No.		Class No.		Class No.		Class No.	Class No.		Class No.	Class No.		Class No.	Class No.		Class No.	
100	Ash under 7.50% Sulphur under 1.25%	110	Ash under 7.50% Sulphur under 1.25%	120	Ash under 7.50% Sulphur under 1.25%	130	140	Ash under 7.50% Sulphur under 1.25%	150	160	Ash under 7.50% Sulphur under 1.25%	170	180	Ash under 7.50% Sulphur under 1.25%	190	Ash under 7.50% Sulphur under 1.25%
101	Ash 7.50% to 9.50% Sulphur under 1.25%	111	Ash 7.50% to 9.50% Sulphur under 1.25%	121	Ash 7.50% to 9.50% Sulphur under 1.25%	131	141	Ash 7.50% to 9.50% Sulphur under 1.25%	151	161	Ash 7.50% to 9.50% Sulphur under 1.25%	171	181	Ash 7.50% to 9.50% Sulphur under 1.25%	191	Ash 7.50% to 9.50% Sulphur under 1.25%
102	Ash 9.50% to 12% Sulphur under 1.25%	112	Ash 9.50% to 12% Sulphur under 1.25%	122	Ash 9.50% to 12% Sulphur under 1.25%	132	142	Ash 9.50% to 12% Sulphur under 1.25%	152	162		172	182			
103	Ash under 7.50% Sulphur 1.25% to 2%	113	Ash under 7.50% Sulphur 1.25% to 2%	123	Ash under 7.50% Sulphur 1.25% to 2%	133	143	Ash under 7.50% Sulphur 1.25% to 2%	153	163	Ash under 7.50% Sulphur 1.25% to 2%	173	183	Ash under 7.50% Sulphur 1.25% to 2%	193	Ash under 7.50% Sulphur 1.25% to 2%
104	Ash 7.50% to 9.50% Sulphur 1.25% to 2%	114	Ash 7.50% to 9.50% Sulphur 1.25% to 2%	124	Ash 7.50% to 9.50% Sulphur 1.25% to 2%	134	144	Ash 7.50% to 9.50% Sulphur 1.25% to 2%	154	164	Ash 7.50% to 9.50% Sulphur 1.25% to 2%	174	184	Ash 7.50% to 9.50% Sulphur 1.25% to 2%	194	Ash 7.50% to 9.50% Sulphur 1.25% to 2%
105	Ash 9.50% to 12% Sulphur 1.25% to 2%	115	Ash 9.50% to 12% Sulphur 1.25% to 2%	125	Ash 9.50% to 12% Sulphur 1.25% to 2%	135	145	Ash 9.50% to 12% Sulphur 1.25% to 2%	155	165		175	185			
106	Ash under 7.50% Sulphur over 2%	116	Ash under 7.50% Sulphur over 2%	126	Ash under 7.50% Sulphur over 2%	136	146	Ash under 7.50% Sulphur over 2%	156	166		176	186			
107	Ash 7.50% to 9.50% Sulphur over 2%	117	Ash 7.50% to 9.50% Sulphur over 2%	127	Ash 7.50% to 9.50% Sulphur over 2%	137	147	Ash 7.50% to 9.50% Sulphur over 2%	157	167		177	187			
108	Ash 9.50% to 12% Sulphur over 2%	118	Ash 9.50% to 12% Sulphur over 2%	128	Ash 9.50% to 12% Sulphur over 2%	138	148	Ash 9.50% to 12% Sulphur over 2%	158	168		178	188			
109	Ash over 12%	119	Ash over 12%	129	Ash over 12%	139	149	Ash over 12%	159	169		179	189			
250	Best Stained under 30% Volatile	300	Poorer Stained under 30% Volatile				200	Slack		200	Slack		200	Slack		
350	Best Stained over 30% Volatile	400	Poorer Stained over 30% Volatile													

Non-Union Mines Paying 30 Per Cent Lower Wages Strip Central Pennsylvania

Union Operators in Other Fields Hard Pressed by Non-Union Competition—Miners Meet on September 20 to Formulate Demands for Next Wage Conference

IT WAS stated from the office of the Central Pennsylvania Coal Producers' Association that the business conditions affecting the mining industry in central Pennsylvania were growing worse daily and would continue to grow worse until a readjustment was made which would place the central Pennsylvania mines upon a proper competitive basis with the great coal fields surrounding where the miners are working at greatly reduced wage rates.

In analyzing the situation, the officers of the association stated that the loss of business from the union mines to the non-union mines in central Pennsylvania, comparing the month of December, 1920, with the month of July, 1921, discloses a large loss of business in the mines operating under the union scale. In a tabulation, the association shows that if the mines operating under the union scale had maintained their ratio of production in the district they would have produced in the month of July 40,279 carloads instead of the 34,153 carloads they actually produced, and the non-union mines would have produced 16,237 carloads instead of the 22,363 they actually produced. In other words, the mines that have made the adjustment in central Pennsylvania have taken 6,126 carloads of business from the mines that have not made the adjustment.

In addition, the field lost tonnage, from the average, 10.5 per cent, that has been maintained by central Pennsylvania against the United States for the past five years. If that average had been maintained during July, the district would have produced 6,300 more carloads. The union mines have stood the loss in their own district of 6,126 carloads and have suffered another loss from the district of 6,300 carloads, or for the month of July have lost a total of 12,426 carloads, or 621,300 tons as compared with a loss of 500,000 tons during June. You will note that the loss for July was 121,300 tons greater than the loss for the month of June. The association predicts a still greater loss for the month of August.

The reason for the loss of business, which business this district has seen go to mines that have made the wage adjustments, is shown by the following tabulation of basic wage rates in the different fields that compete with this district in the eastern market:

	Central Pa. Union	Central Pa. Non-union	Westmoreland	Greensburg	Connellsville H. C. Frick Co.	Connellsville Independent	Somerset Co.
Pick mining, net ton.	1.1431	0.9031	0.55	0.57	0.626	0.542	0.9031
Machine loading, net ton	0.7729	0.625	0.397	0.46	0.395	0.395	0.6479
Cutting and scraping, net ton	*0.16	0.127	0.116	.....	0.10	0.10	0.13
Skilled inside labor, hour	0.9375	0.625	0.50	0.55	0.625	0.56	0.625
Other inside labor, hour	0.909	0.60	0.40	0.495	0.518	0.469	.....
Dumpers, weighmen, trimmers, hour	0.8875	0.49	0.35	0.3625	0.333	0.333	0.5625
Other outside labor, hour	0.825	0.45	0.30	0.3625	0.222	0.222	0.52

* Approximate.

The fields shown in the above tabulation working on the lower rates produce annually 85,000,000 tons. This vast production of coal will have to be absorbed before central Pennsylvania can expect to secure any business on contracts or compete in the spot market for current business. It is the belief of those conversant with the situation that this condition will continue to work a hardship on the union miners and union operators until the United Mine Workers of America see the mistake in their present policy, or the miners in the individual towns take action on their own initiative to work for lower wage rates.

The president of the association, G. Webb Shillingford, has written a letter to John Brophy, president of District No. 2, saying that, as the mine workers' union refuses to discuss wages, there is no advantage in holding any conference whatever. The letter was drafted at a session of the executive committee of the association which assembled in Altoona, Aug. 9.

Miners Demand Governor Remove Guards

DEMAND that the Governor remove mine guards from southern West Virginia was voiced at a mass meeting of miners held at Charleston on Sunday, Aug. 7. The resolution also embodied the terms of settlement of the mine strike in Mingo county suggested some time ago by C. F. Keeney of District 17. The resolutions adopted also call upon the Governor to convene the legislature in extra session in case he has not the power to remove mine guards.

The basis of settlement suggested by Keeney some time ago was that (1) the coal operators agree that all employees return to work without discrimination against any employee belonging to a labor union; (2) the establishment of an eight hour day as applied to all classes; (3) the semi-monthly pay day; (4) the right of employees to trade where they please; (5) the right of employees to elect check-weighmen; (6) weights to be stamped on mine cars; (7) appointment of a joint committee of three persons from each side for the purpose of adjusting wages.

Northern West Virginia Seeks Lower Wages

A NUMBER of mines in the outlying sections of northern West Virginia have broken their contracts with the United Mine Workers and are operating open shop at the rate of wages paid in 1917. Some of the mines thus working are on the Charleston division of the Baltimore & Ohio Ry. There are said to be several between Weston and Tygarts Junction and in the Scott's Run section as well as in Preston County.

The operators have held two meetings at Deer Park, Md., one on July 22 and one on July 29. The operators are afraid that when April 1 comes they will find that all the contracts have gone to the non-union fields and that no matter what wage reductions are then made, as the business will have been placed, there will be no business for them. This view was set forth by T. W. Guthrie, president of the Hillman Coal & Coke Co. at the Deer Park meeting.

Union men, who will not work at less than union wages in union fields, migrate from such regions in periods of slackness and enter non-union mines, accepting the wages that are offered, thus building up these sections at the expense of those that are unionized.

Miners Will Meet at Indianapolis, Sept. 20, to Formulate Demands

STILL expectant of the six-hour day and five-day week and with a few delegates hopeful of the nationalization of mines the United Mine Workers of America will meet at Indianapolis, Ind., Sept. 20, for its biennial session. It will make demands on behalf of both anthracite and bituminous mining sections as to the wage scale to be paid and the mining conditions to be observed after March 31, 1922. About 1,500 delegates will be present, some frugal unions combining with others to send but one delegate to represent them. Two years ago there were 2,044 delegates. This year there will be less. In other years the Indianapolis convention has formulated the wage demands and the tri-district convention in the anthracite region has met and approved them. This year the anthracite delegates at the

convention will submit their demands to the national body, and these demands as approved or modified will be submitted to the tridistrict convention.

Valley Strike, a Fight Within the Union

ON WEDNESDAY, Aug. 10, the Lehigh Valley Coal Co. strikers who had closed eight of the company's collieries, went back to work. There was no real grievance with the company. The fight was really one between the union and the general grievance committee of the locals that are composed of Lehigh Valley men. When Dempsey was president of No. 1 District he let the insurgents get out of hand and arrange for general grievance committees for each company in the northern district. As was expected, the heads of these great grievance committees proved stronger than the union president and vice president.

John Collins, who succeeded Dempsey as president, could control the locals no better than he did. Collins gave way to William J. Brennan of Scranton, Aug. 1, and a test to see who was really in control immediately was made. Strikes were called for every imaginary reason. Finally, when the men were out on strike they agreed to declare that they had been promised that the miners should in no case make less than $7 per day and their helpers should be guaranteed $6, though no such promise had been made. Still the story that such a guarantee was given had caused trouble for two months, and only the threat that the charters of the striking locals would be annulled kept the insurgents in line.

The Lehigh Valley refused to treat with any other than the duly recognized officials of the union, and these officials could but acknowledge that the strike was a direct violation of the contract. After a few days' suspension, Aug. 4 to Aug. 10, the union won out and the men returned to work. Westmoreland went out Aug. 1 and Maltby, Exeter, Seneca, William A., Heidelberg, Broadwell, and Henry went out Aug. 4.

No Wage Reduction in Texas—and No Work

REPRESENTATIVES of the Texas coal operators and of the United Mine Workers in Texas have met in conference at Fort Worth and have concluded their meeting without any reduction in wages being arranged between them. The mine workers were headed by John Wilkinson, president of District 21, and other representatives were: R. G. Sparling, Lawrence Santi and Ed Patterson of Thurber; W. M. Mumford of Strawn, Monroe Catchcart of Lyra, Pete Harrison and Carlos Morino of Bridgeport and Gomer Jones of Newcastle. The mine operators in the conference were: W. K. Gordon and E. S. Britton, representing the Thurber mines; Judge E. B. Ritchie, those at Strawn, and W. H. Ashton and W. H. John, the Bridgeport mines.

The coal operators proposed a reduction from $7.50 to $5 a day for underground labor as a basis from which all other classes of mine labor could be figured. The operators agreed to reopen the mines at once if the wage cut were accepted. It was declared during the conference that the mines at Bridgeport are the only ones now in operation. Those at Thurber, Strawn, Lyra and Newcastle have been closed several months.

Mine Workers Willing to Urge Coal Buying But Not to Take Wage Cut

AFTER conferring with the Secretary of Labor on behalf of the Mine Workers of America, Walker J. James stated that bituminous coal miners are averaging only two days work a week and for that reason could not consider a wage reduction. Mr. James stated that he had conferred with Secretary Davis on general conditions in the industry. He stated that the mine workers are more than willing to join with the government and the operators in an effort to start coal buying.

Lack of Funds Prevents Many Railroads from Buying Storage Coal

RECENTLY the Interstate Commerce Commission called on the railroads to use every effort to speed up the lagging soft coal production by taking in storage coal against next winter's needs. Some of the railroads have replied to the commission, explaining their policy whether it be to store, or not to store. Sufficient information has not been obtained, or released, to show in a conclusive way whether the effort of the commission will be productive, but such letters from the railroads as have been made public indicate clearly the desire on the part of many railroad companies to store coal and their inability to do so because of lack of money. Some apparently are plain "broke," while others not only have a good stock pile of coal but are going to buy more and pile it up.

The Pennsylvania Railroad System reports that it has an 8-day supply, but does not intend to increase it because of lack of funds and also because there is a sufficient car supply which will probably be able to serve its needs later. The New York Central has 779,000 tons which will last it for 30 days and in addition expects 155,000 this month. The Great Northern is also well provided for, having 340,000 tons on hand with orders placed for 28,000 tons a week and 400,000 to be delivered before November 1. The Erie Railroad has more than a month's supply and does not contemplate additional reserve. The Atchison, Topeka and Santa Fe Railroad does not intend to increase its storage, requiring funds for other purposes. With 25,000 tons on hand the Bangor and Aroostock Railroad plans to increase its supply to over 40,000 tons before winter, giving it a 3 or 4 months' supply. The Central of Georgia Railway reports that it does not plan to increase its supply.

The Chicago, Burlington and Quincy is well stocked, having on hand 300,000 tons which it will add to at the rate of 20,000 tons a week this month. Another road well supplied is the Chicago and Northwestern which had 146,000 tons on hand with contracts for 354,000 tons before Dec. 1. The St. Louis and Southwestern Railroad says it has been unable to store coal because of lack of funds but that if the road secures money it will lay in supplies. The Union Pacific has 88,000 tons which will last 15 days, and will increase its reserve with 155,000 tons. The Illinois Central Railroad which serves a coal region will make few purchases for reserve.

No Announcement of Policy on Trade Associations Expected Until October

AN official statement having to do with the activities of trade associations will be issued in the latter part of August. A promise to this effect was made by Commerce Secretary Hoover after a conference on the subject between Mr. Hoover and members of his staff, with the Attorney General and members of the Department of Justice staff. Pending the issuance of this statement, Mr. Hoover declines to comment. The Attorney General stated that there are a great number of trade associations which are of much benefit to business and that the activities of the great majority of these organizations are not being questioned. He said the Department of Justice simply is trying to find if there are not some cases in which illegal activities are being carried forward under the guise of trade associations.

The probabilities are that the official statement which is tc be issued will not go very far toward illuminating the twilight zone which covers a part of the field of some of the existing associations. Since the Supreme Court of the United States is expected to hand down during the October term, an opinion in the hardwood lumber case, which may define some of the limits of the fields of the trade associations, it is not probable that any executive department is going to declare any very definite policy before the rendition of that opinion.

The Department of Commerce has ascertained that there are more than 5,800 trade and industrial organizations in the country.

New Rules and Contracts for Tidewater Coal Exchange, Inc.

REVISED rules of the Tidewater Coal Exchange, Inc., which the members received on Aug. 12 contain many important changes, the most important of which has to do with Rule 18 otherwise known as the Demurrage Rule. The revised rule provides for billing members for the detention accrued only on the tonnage released in the particular month, instead of for the detention accrued in all credits held during the month. The new rule will, it is thought, do away with considerable criticism.

This rule as revised and which, as with the other rules, with the exception of Paragraph "E" of Rule 1, which does not become effective until Sept. 1, have been in force as of Aug. 1, reads as follows:

Each carrier will submit a bill to the Exchange at the close of each calendar month for each port or pier, as required by its tariffs, with statement itemized to show the date of arrival and release of each car, covering total demurrage billed against the Exchange during the preceding month.

The exchange will compile daily demurrage accounts of each member at each separate pier on a tonnage basis, without a separation of pools, and charge against each member the tonnage days detention accrued on tonnage as disposed of in the particular month, whether such disposition is by actual dumping of physical coal or the transfer of tonnage to another member; the tonnage so disposed of to release from demurrage the earliest detained credit held by the member without regard to pools. At least five days free time per ton will be allowed at the time of disposition of the coal, and such tonnage free time will be used as a credit to the member's demurrage account in the month. All credits will operate to reduce the total detention in the particular month in which they accrue and no credits will be carried over to a succeeding month.

On tonnage transferred, each member involved will be charged with the detention accruing during the time such member holds the credit. Free time will be allowed the transferor at the time of the transfer, but will not be allowed the transferee at the time he dumps the tonnage or transfers it to a third party.

In the case of a dry pool all members holding credits in that pool will be automatically released from demurrage on their credits in that pool, and all debit members in that pool will automatically have their total net credit in all pools increased by the amount of the debit in the dry pool. This will be accomplished by means of credit and debit entries in an "adjustment column." A pool is not considered dry unless absolutely void of coal.

The Exchange will render statements to the members on this basis immediately after the close of each month for checking and verification, after which the total net tonnage detention of all members will be used on a pro rata basis for apportioning the railroad bill for the particular month.

Rule No. 1 has been entirely revised to cover many new features. It now provides for annual dues of $300 payable quarterly in advance, the first day of May, August, November and February; to provide for the payment of an initiation fee of $300 by all members elected on and after Sept. 1, 1921; a new form of application giving more complete information regarding prospective members' financial standing, and it also provides that all applications for membership are to be passed upon by the Executive Committee before the applicant will be allowed the privileges of the Exchange.

Rule 8, which has to do with rejections, has been augmented by the addition of a clause providing for the rejection of coal on the request of members.

Rule No. 24, having to do with the extension of credits, has been revised to restrict the extension of credit by the Commissioner.

In addition to calling attention to the changes in the rules, Commissioner Magruder directs special attention to the new form of Members' Contract which gives the Exchange the necessary authority to enforce members to liquidate debits promptly and to release credits promptly; and which it is believed when signed by each member will thoroughly protect the interest of all members. The contract provides that the member is to pay all bills rendered by the Exchange within ten days, that if such payment is not made within the specified time the Exchange may notify the member that if the bill rendered is not paid within five days from date of such demand, the Exchange may sell, after notice in writing to all members, at public sale at the New York office of the Exchange, any or all credits due the member as shown on the books of the Exchange, the proceeds of such sale to be credited by the Exchange on any obligation due by the member to it, the balance, if any, to be turned over to the member.

The contract also provides that the member is to replace all coal borrowed from each and all pools within ten days from the date of demand of the Commissioner of the Exchange to replace such coal in the pool and at the pier from which the coal was borrowed, and in case of failure or refusal to replace borrowed coal within such time the Commissioner is authorized and directed, irrevocably, to purchase sufficient coal of the necessary grade or quality to replace the borrowed coal at the market price thereof and charge the cost of the same and the expense of acquiring and handling it to the member's account.

Pittsburgh Conference Decides to Change Car Service Rules

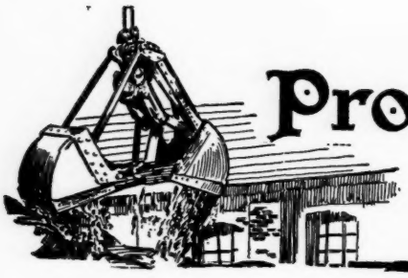
RULES A, B, C, D and I of the mine rating rules (C. S. 31 Revised) probably will be changed as a result of a conference in Pittsburgh, Aug. 11, 12 and 13, between the railroad relations committee of the National Coal Association and a special committee of railroad officials. A tentative agreement also was reached as to changes in the preamble of the car distribution rules. Rule six also is to be changed in several particulars. A sub-committee was appointed to work out the details after which the proposed changes will be submitted to the Interstate Commerce Commission for informal approval. The representatives of the coal operators in attendance at the conference were:

W. L. Andrews, vice-president Consolidation Coal Co., Baltimore; C. D. Boyd, traffic manager Hazard, Harlan and Southern Appalachian Coal Operators' Association, Louisville; W. P. Buffington, traffic manager Pittsburgh Coal Co., Pittsburgh; John Callahan, traffic manager National Coal Association; J. D. Battle, assistant traffic manager National Coal Association; D. F. Hurd, secretary Pittsburgh Vein Operators' Association of Ohio, Cleveland; C. H. Jenkins, secretary-treasurer Hutchinson Coal Co., Farimont, W. Va.; Jonas Waffle, secretary Indiana Coal Trade Bureau, Terre Haute, Ind.; W. D. McKinney, secretary Southern Ohio Coal Exchange, Columbus; W. J. Manley, traffic manager Logan County Coal Operators' Association, Logan, W. Va.; W. B. Troxell, secretary Panhandle Coal Operators' Association, Pittsburgh; S. C. Higgins, traffic manager New River Coal Operators' Association, Charleston, W. Va.; C. J. Goodyear, traffic manager, Pittsburgh Coal Producers' Association, Pittsburgh; J. O. Caldwell, Northern West Virginia Coal Operators' Association, Fairmont, W. Va.; W. E. E. Koepler, secretary Pocahontas Operators' Association, Bluefield, W. Va.; W. Duggan, traffic manager, and C. J. McCumisky, Peabody Coal Co., Chicago.

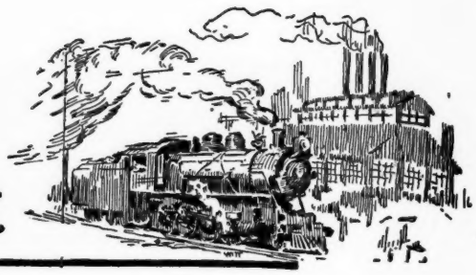
S. L. Yerkes acted as chairman of the coal section and A. G. Gutheim acted as spokesman for the railroad officials, of whom the following were in attendance: D. E. Spangler, general superintendent transportation N. & W. Ry.; H. J. Gorman, vice-president Montour R.R.; J. B. Fisher, general superintendent of transportation Pa. R.R.; J. F. Porterfield, general superintendent transportation, I. C. C. R.R.; W. L. Barnes, general superintendent C., B. & Q. R.R.; A. E. Fillmore, superintendent transportation L. & N. R.R.; W. G. Curren, general superintendent transportation B. & O. R.R.; John Neesner, B. & O. R.R.; and R. R. Harris, superintendent freight transportation Big Four.

BASED ON PARTIAL RETURNS FROM A RECENT QUESTIONNAIRE sent out by the American Wholesale Coal Association, George H. Cushing, its mananging director states that 8 85 per cent of all cars shipped are reconsigned. Of the cars which are reconsigned, 94.5 per cent are reconsigned before reaching the destination to which they are first billed. The figures cover six months during which coal was abundant. Mr. Cushing believes that this indicates that reconsignment cannot be regarded as the badge of speculation.

THE WINDING GULF OPERATORS will hold a meeting at the Greenbriar, White Sulphur Springs, Thursday night, Aug. 25. At 10 o'clock on Friday they will join with the operators of the New River field in a morning session with W. J. Harahan, president of the C. & O. Ry., and discuss traffic matters pertaining to their fields. On Thursday night Mr. Harahan will be the guest of the coal operators at a banquet at the Greenbriar.



Production and the Market



Weekly Review

THAT time is fast approaching when consumers of bituminous coal must decide whether to put in storage now or take chances on car shortage this winter. No one can foresee what the winter holds forth in the way of increased demand for coal from industries and railroads and bad weather such as ties traffic in knots at critical times.

Users and buyers of steam and gas coal should squarely face a few basic facts bearing on the soft coal situation, take observations of their own individual circumstances and act, if the results of putting two and two together show that to be the course.

Considering the country as a whole the situation is quickly appraised. Production this year to Aug. 6, has been a little short of 234,000,000 tons. At the average rate for the year, production by Dec. 31, will have been around 380,000,000 tons. Out of this production is coming exports which were 3,700,000 net tons in June alone. The lowest point to which consumption—not production—has gone in the past nine years was 408,000,000 tons in 1914, a well remembered year of business depression. Consumption in 1920 was 499,000,000 tons, out of a production of 556,000,000 tons, an output better by 175,000,000 tons than is promised for this year.

Now, the significance of these figures is that, although anything is possible it does not seem reasonable that the country has turned its back on prosperity so far that industry will burn less coal than in such a year as 1914.

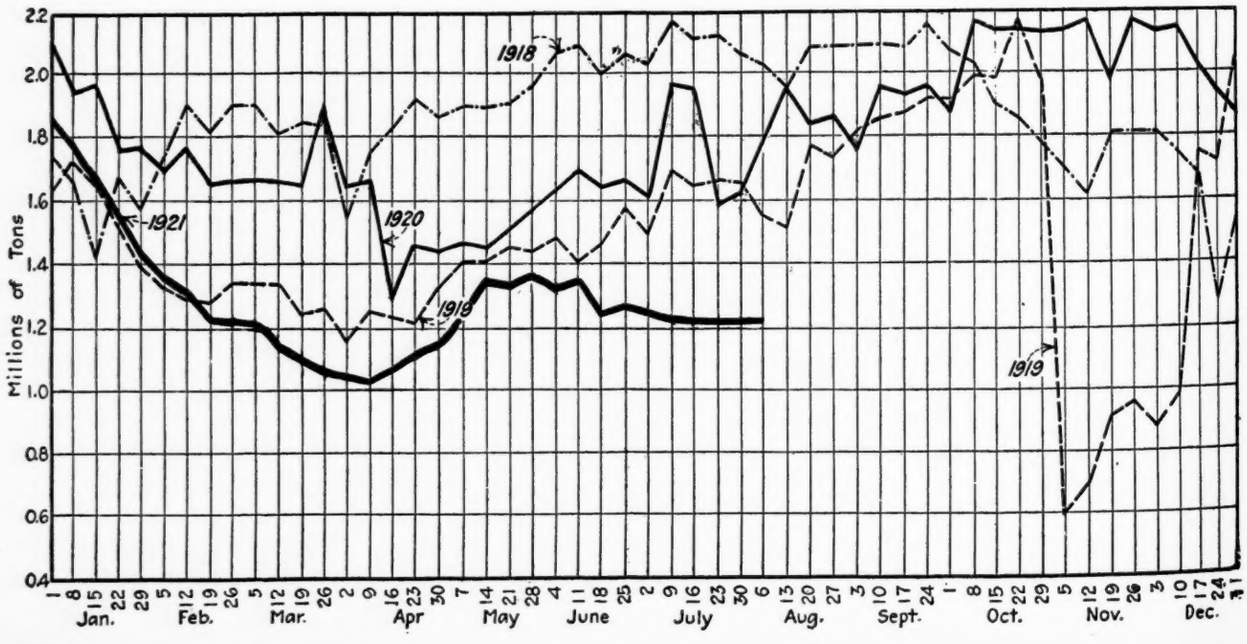
By the end of Labor Day week, that is by Sept. 10, production may be expected to have reached about 280,000,000 tons. In the remaining sixteen weeks of 1921 an average output of 10,000,000 tons would then put the year's total at 430,000,000 tons, or midway between 1914 and 1915.

Transportation Difficulties Foreseen

But production is not going to go to 10,000,000 tons from around 7,000,000 until a lot of people want coal. And if these people are going to want coal and wait, not until early in September, but until late in October or until November, no figures are necessary to indicate the difficulty that will be encountered. The railroads cannot comfortably carry more than 11,000,000 tons a week, at least until they get back in training again.

With these observations in mind the consumer who needs, or is expecting to need this winter any quantity of coal and who has not—as very many have—one, two, three or more months' supply on hand, the quantity depending on distance from source of supply, would do well to analyze his situation, cast up the chances

Daily Average Production of Bituminous Coal*



*From weekly report of Geological Survey.

pro and con and decide now to invest in some coal or take a chance. Coal can be had now at extremely reasonable prices, it is possible to pick the very best quality and to get deliveries from coal companies and railroads anxious for the business.

For six weeks production of bituminous coal has been uniformly just above 7,200,000 tons—in the week of Aug. 6, it was 7,296,000 tons—and prices have shown little change. *Coal Age* Index of spot prices of bituminous coal rose 2 points as of Aug. 15, to 92, from 90 on Aug. 8. The gain was the result of increases in the prices of domestic sizes of soft coal in the central and Middle West following a perceptible strengthening of what for weeks has been a very sluggish demand. At the moment the trade is hopeful, even expectant, that the better feeling of the past week is a forerunner of a real demand and better prices.

BITUMINOUS

The opening days of August saw a continuation of the gradual decline in soft coal production. During the week ended Aug. 6, the output was 7,296,000 net tons, according to the Geological Survey. This represents a decrease of 56,000 tons from the figure of the preceding week. Production is now 76 per cent of the August, 1913, rate; 84 per cent of the 1914 rate, and 83 per cent of the 1915 rate. In spite of the fact, therefore, that the country's requirements normally increase from 15 to 20 million tons yearly, the present rate of output is far below that during the business depression of 1914-15.

Inquiries for Fall Tonnage Increase

That the low point of the present decline in production may have been touched is indicated by early reports of loadings for the second week of August, during the first two days of which 51,438 cars were loaded, as compared with 49,240 the week before. Consumers of both steam and domestic coals are now beginning to think of their fall requirements, and inquiries for tonnage to be delivered in September are increasing, while more actual sales are also being reported.

While the mid-summer trading has been subnormal in the East, there has been a slight pick-up in demand, as measured by the fact that although the Lake and export tonnage has slumped materially, production as a whole is only about 100,000 tons under that of four weeks ago. In certain lines of industry further improvement is recorded, and as conditions pick up, buyers appear more ready to discuss fall business. In some markets there is already a tendency to close contracts for high-grade coals and it is now plain that the inability of the consumer to gage his

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

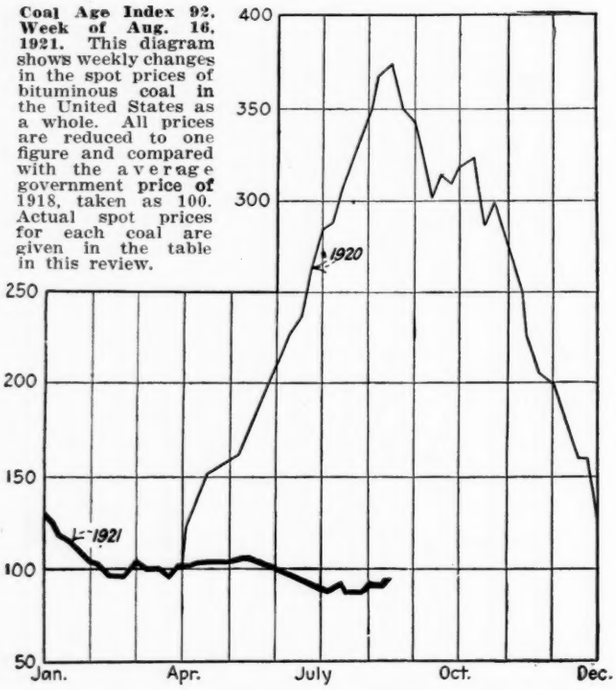
	Market Quoted	July 12, 1921	Aug 2, 1921	Aug. 9, 1921	Aug. 16, 1921†
Low-Volatile, Eastern					
Pocahontas lump	Columbus	$5.75	$5.25	$5.15	**$5 00**@**$5 35**
Pocahontas mine run	Columbus	3.25	3.15	2.90	**2 75**@ **3 25**
Pocahontas screenings	Columbus	2.15	2.40	2.15	**2 25**@ **2 50**
Pocahontas lump	Chicago	5.00	5.40	5.00	**5 00**@ **5.50**
Pocahontas mine run	Chicago	2.65	3.00	2.75	**2 75**@ **3 25**
*Smokeless mine run	Boston	5.90	5.60	5.60	5.50@ 5.65
Clearfield mine run	Boston	2.05	1.90	1.90	1.65@ 2.15
Cambria mine run	Boston	2.70	2.70	2.55	2.25@ 2.85
Somerset mine run	Boston	1.90	1.75	1.70	1.50@ 1.90
Pool 1 (Navy Standard)	New York	3.10	3.15	3.15	3.00@ 3.25
Pool 1 (Navy Standard)	Philadelphia	2.80	2.80	2.95	2.85@ 3.00
Pool 1 (Navy Standard)	Baltimore	2.60	2.40	2.45	**2 50**
Pool 9 (Super. Low Vol.)	New York	2.55	2.60	2.55	2.35@ 2.75
Pool 9 (Super. Low Vol.)	Philadelphia	2.40	2.40	2.35	2.25@ 2.40
Pool 9 (Super. Low Vol.)	Baltimore	2.40	2.20	2.20	**2.25**
Pool 10 (H. Gr. Low Vol.)	New York	2.25	2.35	2.35	*2.00@ 2.50*
Pool 10 (H. Gr. Low Vol.)	Philadelphia	2.20	2.20	2.05	1.90@ 2.15
Pool 10 (H. Gr. Low Vol.)	Baltimore	2.15	2.00	2.00	**2 10**
Pool 11 (Low Vol.)	New York	1.95	1.95	1.95	1.85@ 2.00
Pool 11 (Low Vol.)	Philadelphia	1.90	1.90	1.75	1.65@ 1.85
Pool 11 (Low Vol.)	Baltimore	1.85	1.75	1.70	**1.75**
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.95	1.75	1.85	1.70@ 2.00
Pool 54-64 (Gas and St.)	Philadelphia	1.75	1.75	1.65	1.50@ 1.75
Pool 54-64 (Gas and St.)	Baltimore	1.65	1.50	1.50	**1.60**
Pittsburgh sc'd gas	Pittsburgh	2.95	2.70	2.70	2.60@ 2.80
Pittsburgh mine run (St.)	Pittsburgh	2.10	2.10	2.10	2.00@ 2.15
Pittsburgh slack (gas)	Pittsburgh	1.45	1.70	1.70	1.65@ 1.75
Kanawha lump	Columbus	3.25	2.90	3.25	**3.25**@ **3.60**
Kanawha mine run	Columbus	2.15	2.00	2.15	*2.00@ 2.20*
Kanawha screenings	Columbus	1.15	1.35	1.50	1.40@ 1.60
Hocking lump	Columbus	3.25	3.15	3.15	**3 00**@ **3 35**
Hocking mine run	Columbus	2.15	2.15	2.15	2.00@ 2.25
Hocking screenings	Columbus	1.20	1.30	1.50	1.40@ 1.60
Pitts. No. 8 lump	Cleveland	3.25	3.25	3.25	3.00@ 3.50
Pitts. No. 8 mine run	Cleveland	$2.25	$2.30	$2.30	$2.25@$2.35
Pitts. No. 8 screenings	Cleveland	1.25	1.45	1.80	1.70@ 1.85
Midwest					
Franklin, Ill. lump	Chicago	3.55	3.55	3.55	**3 50**@ **4 05**
Franklin, Ill. mine run	Chicago	3.15	3.15	3.15	**3 00**@ **3 55**
Franklin, Ill. screenings	Chicago	1.90	1.90	1.85	*1 50@ 2 00*
Central, Ill. lump	Chicago	2.65	2.50	2.75	**2 75**@ **3 00**
Central, Ill. mine run	Chicago	2 40	2.25	2.20	*1 90@ 2.35*
Central, Ill. screenings	Chicago	1 65	1.60	1.60	*1 30@ 1 75*
Ind. 4th Vein lump	Chicago	2.90	3.60	3 60	3 50@ 3 65
Ind. 4th Vein mine run	Chicago	2.50	3.10	3.10	2 90@ 3 25
Ind. 4th Vein screenings	Chicago	1.70	2.15	2.15	2 00@ 2.25
Ind. 5th Vein lump	Chicago	2.75	2.90	2.90	2 75@ 3 00
Ind. 5th Vein mine run	Chicago	2.40	2.45	2.45	2.25@ 2.65
Ind. 5th Vein screenings	Chicago	1.70	1.65	1.65	1.50@ 1.75
Standard lump	St. Louis	2.25	2.25	2.20	**2.50**@ **2.75**
Standard mine run	St. Louis	1.75	1.70	1.75	1 75
Standard screenings	St. Louis	0.85	1.00	1.15	*1.00@ 1.20*
West. Ky. lump	Louisville	2.70	2.95	3.00	2.50@ 3 50
West Ky. mine run	Louisville	2.10	2.35	2.25	**2.00**@ **2 85**
West Ky. screenings	Louisville	1.40	1.65	1.70	1.35@ 2.00
South and Southwest					
Big Seam lump	Birmingham	3.40	3.55	3.75	3.25@ 4.20
Big Seam mine run	Birmingham	2.15	2.15	2.15	2.00@ 2.25
Big Seam (washed)	Birmingham	2.35	2.40	2.40	2.25@ 2.50
S. E. Ky. lump	Louisville	3.50	3 50	3.60	**3.50**@ **3 75**
S. E. Ky. mine run	Louisville	2.25	2.35	2.30	**2.25**@ **2 40**
S. E. Ky. screenings	Louisville	1.40	1 50	1.65	**1.60**@ **1.75**
Kansas lump	Kaansas City	5.40	5.50	5.50	**5.65**
Kansas mine run	Kansas City	4.25	4.40	4.40	4.40
Kansas screenings	Kansas City	3.25	3.25	3.25	3.25

*Gross tons, f.o.b. vessel, Hampton Roads.
†Advance over previous week shown in **heavy type**, declines in italics.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

	Market Quoted	Freight Rates	Aug. 2, 1921 Independent	Aug. 2, 1921 Company	Aug. 9, 1921 Independent	Aug. 9, 1921 Company	Aug. 16, 1921† Independent	Aug. 16, 1921† Company
Broken	New York	$2.61	$8.00@$8.15	$7.50@$7.75	.....	$7.50@$7.75	.....	$7.50@$7.75
Broken	Philadelphia	2.66	8.00@ 8.20	7.65@ 7.85	$7.50@$8.20	7.65@ 7.85	$7.50@$8.20	7.65@ 7.85
*Broken	Chicago	5.62	12.40	12.45	12.40	12.45	12.40	**12.55**
Egg	New York	2.61	7.55@ 7.85	7.50@ 7.75	7.40@ 7.75	7.50@ 7.75	*7.30@ 7.75*	7.50@ 7.75
Egg	Philadelphia	2.66	8.00@ 8.20	7.65@ 7.85	7.60@ 8.20	7.65@ 7.85	7.60@ 8.20	7.65@ 7.85
*Egg	Chicago	5.62	12.40	12.45	12.40	12.45	12.40	**12.55**
Stove	New York	2.61	7.70@ 8.00	7.80@ 8.10	7.80@ 8.00	7.80@ 8.10	**7.80@ 8.25**	7.80@ 8.10
Stove	Philadelphia	2.66	8.25@ 8.35	7.95@ 8.25	8.00@ 8.35	7.95@ 8.25	8.00@ 8.35	7.95@ 8.25
*Stove	Chicago	5.62	12.70	12.70	12.70	12.70	12.70	**12.80**
Chestnut	New York	2.61	7.50@ 7.75	7.80@ 8.10	7.25@ 7.75	7.80@ 8.10	7.25@ 7.75	7.80@ 8.10
Chestnut	Philade'phia	2.66	8.00@ 8.40	7.95@ 8.25	7.75@ 8.25	7.95@ 8.25	*7.75@ 8.00*	7.95@ 8.25
*Chestnut	Chicago	5.62	12.70	12.70	12.70	12 80	**12 75**	**12 90**
Pea	New York	2.47	4.50@ 5.50	6.05@ 6.45	4.50@ 5.25	6.05@ 6.45	4.50@ 5.25	6.05@ 6.45
Pea	Philadelphia	2.38	4.50@ 6.00	6.10@ 6.20	4.50@ 5.75	6.10@ 6.20	*4.50@ 5.50*	6.10@ 6.20
*Pea	Chicago	5.62	11.10	11.20	11.10	11 20	11 10	**11 25**
Buckwheat No. 1	New York	2.47	2.50@ 3.25	3.50	2.50@ 3.00	3.50	**2 50**@ **3.25**	3 50
Buckwheat No. 1	Philadelphia	2.38	2.50@ 3.00	3.50	2.50@ 3.00	3.50	2.50@ 3.00	3 50
Rice	New York	2.47	1.75@ 2.25	2.50	1.50@ 2.00	2.50	**1.50**@ **2 25**	2.50
Rice	Philadelphia	2.38	1.75@ 2.00	2.50	1.75@ 2.00	2.50	1.75@ 2 00	2.50
Barley	New York	2.47	0.75@ 1.25	1.50	0.75@ 1.25	1.50	**0.90@ 1.25**	1 50
Barley	Philadelphia	2.38	0.75@ 1.25	1.50	0.75@ 1.25	1.50	0.75@ 1.25	1 50
Birdseye	New York	2.47	.....	2.50	.....	2.50	.....	2.50

*Prices and freight rates, net tons; quotations f.o.b. cars, Chicago.
†Advances over previous week shown in **heavy type**, declines in italics.



Coal Age Index 92, Week of Aug. 16, 1921. This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1918, taken as 100. Actual spot prices for each coal are given in the table in this review.

needs is more responsible for the sluggish market than is the question of price.

Reports on the all-rail movement to New England show a decline in tonnage. During the week ended Aug. 6, 2,609 cars of anthracite and 2,780 cars of soft coal were forwarded, compared with 2,543 and 3,029 respectively in the preceding week.

Smokeless Coals at Attractive Prices

The export market is in the doldrums and except for scattered small tonnages moving to Cuba, South America and West Italy, but little business is being transacted. Low prices fail to make a sale as business, temporarily at least, is entirely lacking. Bunkers and coastwise coal to New England, therefore, occupy the Hampton Roads shippers, and an increasing number of New England industries are taking advantage of the situation to procure smokeless coals at attractive figures.

Tidewater movement fell off sharply during July, when 3,601,000 net tons of soft coal were dumped over the North Atlantic piers. Compared with the total dumpings for May, this was a decrease of 891,000 tons, or nearly 20 per cent.

TIDEWATER BITUMINOUS COAL SHIPMENTS FOR JULY, 1921
(In net tons)

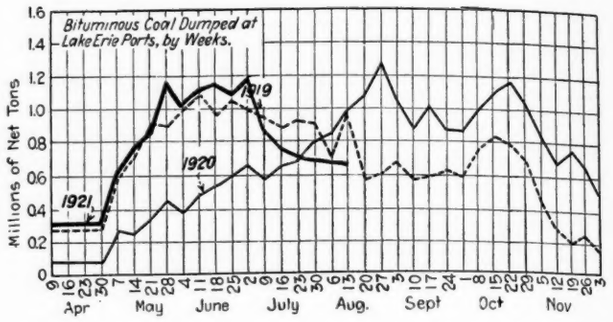
Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total
Coastwise to New England..	103,000	46,000	79,000	445,000	.....	673,000
Exports....	.....	62,000	316,000	954,000	55,000	1,387,000
Bunker.....	377,000	43,000	65,000	368,000	4,000	857,000
Inside capes	.....	139,000	52,000	28,000	.....	219,000
Other tonnage..	413,000	.....	1,000	48,000	3,000	465,000
Total....	893,000	290,000	513,000	1,843,000	62,000	3,601,000

CUMULATIVE TIDEWATER SHIPMENTS, CALENDAR YEAR TO JULY 31
(Net tons)

	New England	Exports	Bunker	Other	Total
1919.....	4,674,000	3,406,000	3,891,000	8,045,000	20,016,000
1920.....	5,824,000	10,748,000	4,895,000	6,688,000	28,155,000
1921.....	4,347,000	8,294,000	5,577,000	5,979,000	24,197,000

Screenings, which had advanced of late, are losing some of their caste, with a renewal of domestic production. Dealers say that household buying is on the increase but many are still unable to place orders and their yards remain heavily stocked.

Dumpings of Lake coal are lower. During the week ended Aug. 13, the total loadings were 646,915 net tons, divided; 621,785 cargo and 25,130 vessel fuel. Movement for the season to date is 14,774,715 tons, as compared with



8,556,035 tons last year. The Northwestern market is now absorbing a better volume of coal and pressure on the storage docks at the Head-of-the-Lakes has been lightened. A slight betterment in the iron ore industry is providing down cargoes for Lake coal-carriers and a better feeling prevails in the territory served by the Duluth-Superior docks. Lake shippers feel that with a continuance of the better Inland market, movement up the Lakes may be maintained at nearly the present rate.

ANTHRACITE

Production declined sharply in the week ended Aug. 6. Labor troubles resulted in the closing of several collieries and limited the output to 1,564,000 net tons, nearly 200,000 tons less than during the preceding week. Corrected figures of July production now place the output at 7,050,000 net tons and for the calendar year to Aug. 1, 52,500,000 tons.

Dealers' stocks of domestic sizes are generally heavy, and in the continuance of slow household buying mine orders are becoming scarcer. However, record Lake loadings are reported—199,600 net tons the first week of August—and this furnishes a satisfactory outlet for much tonnage.

COKE

Beehive coke production again recorded an increase when 55,000 net tons were produced in the week ended Aug. 6. Cumulative 1921 production is 3,617,000 net tons, against

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

(NET TONS)

BITUMINOUS COAL

Total Bituminous, Including Coal Coked

	1921 Week	1921 Calendar Year to Date	1920 Week	1920 Calendar Year to Date *a*
July 23*b*.....	7,380,000	219,329,000	10,470,000	289,191,000
Daily average.....	1,230,000	1,274,000	1,745,000	1,675,000
July 30*b*.....	7,352,000	226,680,000	9,371,000	298,562,000
Daily average.....	1,225,000	1,273,000	1,562,000	1,672,000
Aug. 6*c*.....	7,296,000	233,977,000	10,432,000	308,994,000
Daily average.....	1,216,000	1,271,000	1,739,000	1,674,000

(*a*) Less 2 days' production during New Year's week to equalize number of days covered for the last two years. (*b*) Revised from last report. (*c*) Subject to revision.

ANTHRACITE

	1921 Week	1921 Calendar Year to Date	1920 Week	1920 Calendar Year to Date *a*
July 23.....	1,837,000		1,819,000	
July 30.....	1,750,000		1,912,000	
Aug. 6.....	1,564,000	54,064,000	1,805,000	54,205,000

(*a*) Less two days' production during New Year's week to equalize number of days covered for the last two years.

BEEHIVE COKE

Week Ended Aug. 6 1921*a*	Week Ended July 30 1921*b*	Week Ended Aug. 7 1920	1921 to Date	1920*c* to Date
55,000	45,000	382,000	3,617,000	12,793,000

(*a*) Subject to revision. (*b*) Revised from last report. (*c*) Less two days' production during New Year's week to equalize number of days covered for the last two years.

12,973,000 in 1920. Total production of all coke in July was 1,465,000 net tons, as compared with 1,642,000 in June. This is less than the monthly average of any of the last four years.

Some new inquiries are being received, but operators are cautious in quoting prices, feeling that present figures are too low to form a basis for future business. Connellsville quotations are purely nominal: Spot furnace $2.90@$3; contract furnace $3 and foundry $4@$4.50.

The depression in the coke industry throws a flood of light on the absence of demand for coal. It is estimated that the coal consumed in the manufacture of coke in the month of July was 2,132,000 tons, of which 1,846,000 tons were used in by-product ovens. The coke industry, which normally takes 15 per cent of the coal supply of the country, is now consuming coal at a rate of less than one-third of its requirements during periods of greatest business activity.

ESTIMATED MONTHLY CONSUMPTION OF COAL FOR MANUFACTURE OF COKE

(Net tons)

	Consumed in By-product Ovens	Consumed in Beehive Ovens	Total Coal Consumed
1917 Monthly average	2,625,000	4,354,000	6,979,000
1918 Monthly average	3,072,000	4,014,000	7,086,000
1919 Monthly average	2,988,000	2,583,000a	5,571,000
1920 Monthly average	3,685,000	2,758,000a	6,443,000
June, 1921	2,026,000ab	367,000a	2,393,000
July, 1921	1,846,000a	286,000a	2,132,000

(a) Assuming a yield in merchantable coke of 69.6 per cent of the coal charged in by-product ovens, and 63.4 per cent in beehive ovens. (b) Revised from last report.

Inspection Necessary to Maintain Standards of Coal

Lack of Definitions in the Coal Trade Must be Overcome Before a Coal Exchange Can Function

BY PAUL WOOTON

THE expected discussion on the floor of the Senate of the possibilities of a coal exchange as a stabilizing element in the coal industry did not materialize due to the fact that Senator Dial's amendment to the grain futures bill was unexpectedly withdrawn. It had been the South Carolina Senator's intention to insist on a vote on the amendment which would have resulted in the destruction of cotton exchanges. Senator Ransdell, of Louisiana, in whose state is located the large New Orleans Cotton Exchange, was prepared to oppose the amendment and expected to shown that high government officials are at this time engaged in urging a coal exchange for the coal industry.

The withdrawal of the Dial amendment means that the discussion will be transferred to a sub-committee of the Committee on Agriculture.

Senator Ransdell's public statement that the coal exchange is being looked to as a stabilizing factor in the coal industry brought to light the fact that the matter has been under quiet discussion in government circles for the past several weeks. The idea has received stimulation in the success of the Sewell's Point Coal Exchange. It also has been learned that the American Wholesale Coal Association has made a formal proposal to assist the Department of Commerce and the Bureau of Mines in the study of the matter and that the tender of assistance has been accepted in each case.

It is admitted that the principal difficulty which must be surmounted is the fixing of the grades of coal. The matter of sampling an analysis is not regarded as an obstacle, as it is known definitely that this can be done promptly and with sufficient accuracy to meet the requirements. At present, the grades of coal are hardly deserving of the name. Such terms as steam coal, domestic coal, lump, and screenings may mean nearly anything. It is recognized that no such generalities could be made if coal is to be dealt with on an exchange. It also is recognized that, in addition to such sampling and analyzing as may be done, practice and experience must be utilized to a large extent in such determinations.

The Sewell's Point Exchange is the first attempt to classify coal on a rational basis and to publish the analytical limits of these classifications. The plan has worked out so well on the Virginian railroad that it is declared by a high government official that a coal exchange could be put into immediate operation to cover transactions on coal that is shipped over Sewall's Point pier.

An absolute prerequisite to the plan is that there be an inspection system which shall be impartial and which shall be in operation at all times, in order to keep the coal up to the standard.

In such a plan, the Bureau of Mines' function, as interpreted by Bureau officials, would not be to classify but to gather facts on which the classification would be based. The industry itself would be required to do the classifying.

Glen Alden Will Lay Off Men

THOUGH W. W. Inglis, president of the Glen Alden Coal Co., denies that it is the intention to close down six collieries on Aug. 27 when the Kohler and Fowler bills come into operation, he is announced as declaring that any plant that cannot be operated without violating the mine cave laws will have to be closed. S. J. McDonald, president of the Central Labor Union, has made the statement that the Glen Alden Coal Co. will close six collieries rather than face the possibility that the Kohler and Fowler bills are constitutional.

Manufacturers Ask Congress to Speed Railroad Financial Relief

WITHOUT question the resumption of demand and of production of bituminous coal hinges largely on the ability of the railroads to re-establish their credit and to enter the market for such equipment and raw material as they are reported to greatly need. The feeling is well grounded that prostrate railroads mean prostrate industry. Manufacturers of railway equipment, material, and supplies forming a group known as the Railway Business Association have addressed a letter to Senator Cummins urging the prompt consideration and passage of Senate Bill 2337, which gives the railroads time in which to repay sums advanced by the government during federal control for capital purposes and also releases for immediate use balances due the roads from the government on other accounts.

Pointing out that hundreds of thousands of unemployed men look for work to the employers represented in this association, the letter to Senator Cummins signed by A. B. Johnson, president of the association, says: "Rather than contribute even a half hour to the delay, the Railway Business Association refrains from offering testimony at your hearings, and requests instead that this letter be inserted in the record. We urge—

"(1) Prompt action. The voluntary vacation for Congress without this enactment would mean an involuntary vacation without pay for hundreds of thousands of industrial employees.

"(2) Separate action. We hope you will exclude serious consideration of amendment not essential to clarify the primary purpose of the bill. Congress has no mandate of ascertained public purpose to modify any essential principle of the Transportation Act of 1920. If discussion of general amendment is desired it can be conducted most advantageously on its merit free from confusion with the discharge of plain governmental obligation, so recognized by the President of the United States, the Secretary of the Treasury and the Director General of Railroads. If it shall be chosen that Congress at this time abandon its established policy in order to make railway rates by statute, instead of through an administrative tribunal created by it, such a reversal of Federal method and practice requires in safety to the public a discussion so thorough that postponement of industrial resumption through the debate is unthinkable."

Foreign Market And Export News

Stern Necessity for Export Trade Forces British Prices Down

Production Continues to Improve — Continuation of Mine Operation Depends on Getting Business—French and Italian Markets Dull—Large Order in Argentine

British coal production continues its climb back to the pre-strike level. Cabled reports to *Coal Age* show the output in the last week of July as 4,587,300 gross tons, a gain of more than 200,000 tons over the preceding week and above the tonnage of the corresponding weeks of both 1919 and 1920. Excepting only Northumberland, every district recorded a gain in the week of July 23 over preceding weeks, despite the fact that fewer pits are being worked. Yorkshire, South Wales and Monmouth each passed the three quarter million ton mark and Durham and Derby for the second week each produced in excess of 500,000 gross tons.

Under pressure from every side the British export prices are being forced downward. The London Coal Exporters' Association has addressed a letter to the Prime Minister, urging the danger to the coal industry and to the whole community of the continuance of the present exorbitant prices, this being entirely against the spirit of the settlement under which the Government provided £10,000,000 to enable the collieries to recover the former home and export coal trades. The Association emphasizes that no time should be lost in offering coals at much lower prices for forward delivery, otherwise stoppage of the pits must occur very shortly. The cost of production in July has no bearing on the probable cost in August and September, when output should be in full swing, and the price must be cut now or trade cannot be recovered.

The drop in British prices is evident from the following quotations cabled to *Coal Age*:

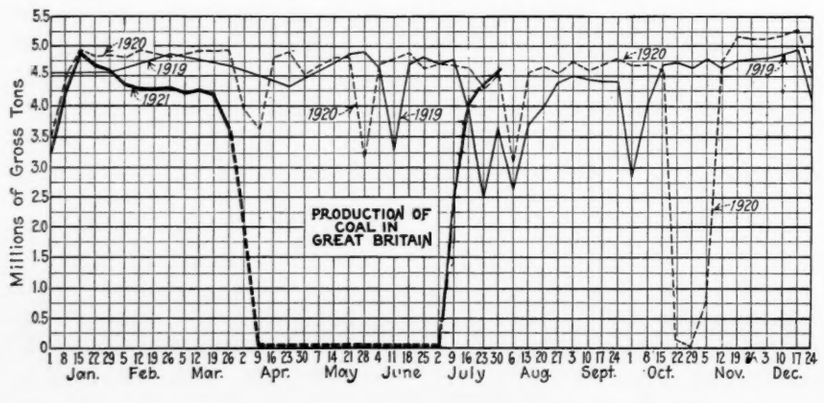
CURRENT QUOTATIONS, BRITISH COAL, F.O.B. PORT, GROSS TONS

Cardiff:	Aug. 6	Aug. 13
Ad,, Large	40s. @ 42s. 6d.	37s. 6d. @ 38s. 6d.
Steams, Small	20s. @ 22s. 6d.	19s. @ 20s.
New Castle:		
Best Steams	37s. 6d. @ 40s.	32s. 6d.
Best Gas	37s. 6d.	35s. @ 37s. 6d.
Bunkers, Specials		32s. 6d.
Bunkers, Best	35s. @ 37s. 6d.	30s.

Exports of coal from the United Kingdom in July were 816,000 gross tons, compared with which exports from North Atlantic ports of the United States were 1,295,000 gross tons. Hampton Roads alone loaded more export cargo coal than all of the United Kingdom in July.

It is stated on good authority that a contract has just been concluded for 40,000 tons of Monmouth black vein coal for the Argentine. The shipments, which will be at the rate of 10,000 tons per month, will begin in September. The price is stated to be 35s. per ton for large, and 20s. for small coal. This is regarded as the opening of a British campaign to regain the Argentine coal trade.

In all, there are 131 mines that have not as yet been reopened since the strike. These pits, of which 36 are in South Wales and Monmouthshire, 21 in Durham, 18 in Yorkshire and the others in nine other fields, normally employed 25,629 men, which indicates that they represent but a small portion of the total. In addition there were 93 mines normally employing 29,000 men where work on dewatering is in progress.



Pier and Bunker Prices, Gross Tons

(Foreign Bunker Quotations by Cable to Coal Age)

PIERS

	Aug. 6	Aug. 13
Pool 9, New York	$5.90@$6.10	$5.70@$5.95
Pool 10, New York	5.40@ 5.75	5.35@ 5.75
Pool 71, New York	5.90@ 6.00	5.90@ 6.00
Pool 9, Philadelphia	.....	5.80@ 6.00
Pool 10, Philadelphia	.....	5.40@ 5.70
Pool 71, Philadelphia	.....	6.00@ 6.35
Pool 1, Hampton Roads	5.50@ 6.00	5.50
Pools 5-6-7, Hampton Roads	4.75@ 5.25	5.00

BUNKERS

Pool 9, New York	$6.20@$6.45	$6.00@$6.25
Pool 10, New York	5.70@ 6.10	5.70@ 5.90
Pool 9, Philadelphia	.....	6.10@ 6.30
Pool 10, Philadelphia	.....	5.70@ 6.00
Welsh, Gibraltar	60s. f.o.b.	60s. f.o.b.
Welsh, Port Said	80s. f.o.b.	80s. f.o.b.
Welsh, Singapore	102s. 6d. f.o.b.	102s. 6d. f.o.b.
Welsh, Rio Janeiro	90s. f.o.b.	90s. f.o.b.
Welsh, Algiers	60s. f.o.b.	60s. f.o.b.
Welsh, Malta	75s. f.o.b.	75s. f.o.b.
Welsh, Lisbon	85s. f.o.b.	85s. f.o.b.
Welsh, La Plata	80s. f.o.b.	80s. f.o.b.
Welsh, Madeira	65s. f.a.s.	65s. f.a.s.
Welsh, Teneriffe	65s. f.a.s.	65s. f.a.s.
Welsh, Genoa	69s. t.i.b.	69s. t.i.b.
Durham, Newcastle	35s@37s 6d. f.o.b.	35s. @37s. 6d. f.o.b.
Local, Sydney	.....	31s. 6d. f.o.b.
Local, Newcastle	.....	22s. f.o.b.
Local, Port Kembla	.....	30s. 9d. f.o.b.
Local, Wellington	.....	47s. 9d@51s. 10d. f.o.b.

Hampton Roads Inactive as Export Demand Slumps

With export business continuing to exhibit a pronounced slump, the coal trade is coming to rely more and more on bunker business and New England movement. Neither of these are very active, but they are relatively more important now than the oversea trade. Even compared with March, the present apathy of the market is unusual. Export clearances have grown so infrequent that there are now no more in a week than occurred every day during the greater part of June.

The technical position of the spot market is rendered more stable by the fact that shipments from the mines have been promptly curtailed with the shrinkage in dumpings. As a result there is no such overburdening accumulation of tonnage as forced the market down during February and March. Distress coal has been quoted at extremely low figures, but the real market price is hardly below $5.50 for Pools 1 and 2.

PIER SITUATION

	Week Ended Aug. 4	Week Ended Aug. 11
N. & W. Piers, Lamberts Point:		
Cars on hand	2,633	2,100
Tons on hand	124,849	103,655
Tons dumped	212,282	128,912
Tonnage waiting	7,400	3,600
Virginian Ry. Piers, Sewalls Point:		
Cars on hand	2,052	2,080
Tons on hand	102,600	104,000
Tons dumped	83,811	80,812
Tonnage waiting	15,407	4,650
C. & O. Piers, Newport News:		
Cars on hand	2,309	1,889
Tons on hand	115,450	94,450
Tons dumped	71,748	51,913
Tonnage waiting	5,485	7,980

Only a little more than 300,000 tons have been reported at the various terminals any time this month. In comparison with the small amount of vessel tonnage registered for loading this figure represents a heavy accumulation, but early in the year the amount of coal on the tracks here was often above 400,000 tons.

Such inquiries as are received concern chiefly the low-volatile pools. There is practically no interest in high-volatile coals in the oversea trade. Spot prices on such pools at $5 or under are said to be considerably under cost of production, but even at such figures, there is no market.

Upper Silesia Production Below Normal

Production of coal in the Ruhr in the week ended July 30 was 1,761,000 metric tons, a slight decrease from 1,779,000 tons the week previous. A further cable to *Coal Age* gives the output in Upper Silesia in July as 1,998,797 tons, which exceeds the average per month for the five months ended with May (1,662,000 tons) but is much below normal, the output in February, 1921, for instance having been 2,811,904 tons.

Belgian Coal Prices Reduced

Advices to *Coal Age* under date of Aug. 3 are to the effect that on the Belgian coal market there is an absence of activity except in domestic descriptions. A reduction of four francs has been made on industrial sorts and 8 to 10 francs on other descriptions. It is asserted that the miners' unions will insist on a reduction in the price of domestic coals since the agreement relating to the reduction in wages of five per cent was made on condition that the prices of all coals should be brought down.

Quotations on domestic coals are 123.5 francs for large sizes, and for industrial coals; run of mine 25 per cent, 89 francs, 35 per cent, 93.5 francs, 40 per cent, 96 francs. Briquets are quoted at 100@116 francs and bunkers at 135 francs.

American gas coal is quoted in Rotterdam under date of Aug. 12, at $7 per gross ton, f.a.s. and British steam coal is quoted at 39s., which is approximately $7.50 at current exchange.

Italian Imports, Mainly German Coal

Imports of coal into Italy the first half of July were 174,000 metric tons, of which the United States sent 61,000 tons, Westphalia (Reparations coal) 106,000 tons, and Upper Silesia, 2,000 tons.

Quotations by cable on Aug. 12 were for American steam coal at Milan, 310 @315 lire, compared with which prices were 315@320 lire on Aug. 1. Cardiff coal is now quoted at 325@335 lire per ton, or higher than coal from this country.

Export Clearances, Week Ended Aug. 11

	Tons
From Baltimore	
For Argentine:	
Br. SS. Glendenon	5,456
For Italy:	
Port SS. Faro	5,132
For Sweden:	
Sw. SS. Lestris	3,737
From Hampton Roads	
For Atlantic Islands:	
Am. Schr.—Frank A. Morey, for Hamilton, Bermuda	828
Nor. SS. Bratland, for Port of Spain	2,731
For Brazil:	
Grk. SS. Ionia, for Rio de Janeiro	6,032
Am. SS. Orient, for Rio de Janeiro	5,693
Du. SS. Wolsum, for Buenos Aires	5,610
For Cuba	
Am. SS. Moosehauic, for Havana	4,634
Cu. SS. Estrade Palma, for Havana	5,363
For Greece	
Grk. SS. Pokos Vergottis, for Piraeus	7,960
For Italy	
Br. SS. Thamesmede for Trieste	5,049

C.I.F. Prices, American Coal

	—Aug. 6—		—Aug. 13—	
	Low Vol.	High Vol.	Low Vol.	High Vol.
River Plate	$9.95	$9.05	$9.70	$9.10
French Atlantic	10.95	9.15	....	....
United Kingdom	10.80	10.00	....	....
West Italy	11.40	10.50	10.00	9.50
Scandinavia	11.00	10.50	....	....
Port Said	12.00	11.25	....	....
Piraeus	....	....	10.90	10.30

Reports From the Market Centers

Tidewater—East

NEW YORK

Anthracite Buying Slow—Effect of Tax Bills Unknown—Inquiries for Bituminous Increase, While Harbor Quotations Show Slight Decrease—Buying Revival Expected Shortly.

Anthracite—Demand centers around stove coal and the other large sizes are being moved because of it. Some tradesmen see a slight betterment due to the many interruptions in mining and the continued urgency of dealers to their customers to put in their winter fuel.

The companies' supply of pea is steadily increasing, but so far, because of the demand outside of this district, has caused them no trouble. Independent operators and shippers are not having as easy a time to keep their product on the move. An effort is being made to include portions of egg and chestnut sizes in all orders for stove and on this account quotations in most instances have been around company schedules.

Some curiosity exists as to what the operators will do with regard to prices when the Kohler-Fowler Mine Bills become operative the last of this month. Nothing as to their attitude has yet been learned.

Bituminous—In the opinion of some coal men the optimism prevalent a week ago was not so prominent in the week just past. From reports among the trade it is evident the railroads do not intend to do any amount of heavy buying at this time. Most of the roads have many days supply on hand and have contracts for their ordinary requirements.

Dealers, as a rule, look for a decided improvement in the next couple of weeks or at the latest by the middle of September. Inquiries for bona fide business are increasing although the placing of buying orders is delayed.

Collections are slow and shippers in many cases are complaining. In some instances the buyer with the ready money is securing concessions that the slow payer does not receive.

While there is considerable more coal out of the pools than in the pool in this harbor, quotations for the pool coals are slightly lower unless the buyer can be guaranteed that he will be given the particular coal he desires. On the other hand some coal has been sacrificed to save extra charges, but these occasions are few.

PHILADELPHIA

High Anthracite Prices Annoy Consumer—Quotations Firm, Except Pea—Some Mines on Part-Time—Bituminous Quiet, but with Signs of Improvement—Industry Better.

Anthracite—It has come close to being a fair week with the retailers, considered from the standpoint of coal sent out. Nobody was rushed, but the consumer shows renewed interest.

The consumer is puzzled by the continued high prices, and the fact that it is not coming down causes much feeling, especially when the retailer advises it is likely to go even higher. The question of quality seems to be the last consideration.

Dealers continue to stock pea in order to get the larger sizes, yet they grow doubtful of their ability to move all they have in stock during the coming winter.

Prices on the family sizes continue unchanged, except, of course, on pea. The majority of shippers are holding firmly to their prices, even though they have many cars of this size standing on demurrage.

The matter of tax continues to bob up and recently the rumor was current that the companies were about to make a separate charge, both for the tax at the mine mouth and the tax under the mine subsidence law. There is no doubt that something is brewing beneath the surface and that an announcement will soon be forthcoming.

Steam coals remain flat, with buckwheat the only size being moved to any extent.

Bituminous—Buying remains on the same level, but with an occasional exception, as several shippers report a moderate increase in sales the last few days. There is also a more frequent inquiry for prices and it would seem that the consumer is giving more attention to his fuel requirements as fall approaches.

Recently there has been some quiet activity on the part of producers of high grade fuels to get more tonnage under agreement. No prices have been

given out, but some consumers intimate that they could get a fair tonnage for the balance of the coal year at a favorable figure, and in fact a few have closed.

There has been some real improvement of business conditions, for iron plants that were not running at all have now started up on a small scale. Textiles also have improved, with the ending of a strike of long standing in the carpet trade.

Tide business is not even ordinary, being principally a light bunker trade, with a few coal charters closed recently.

BALTIMORE

Demand Continues Poor—Prices Extremely Low—Hard Coal Trading Still Off-Color—Dealers See Fall Jam.

Bituminous — Demand for all grades continues poor and there is so far an utter lack of orders for the usual mid-August supplies by business houses and factories. Should there be a decided awakening of business this fall an undoubted jam will occur in transportation and the inability to supply all coal at one time will be sharply felt once more.

There is no doubt that the dearth of orders is this time not so much due to inability to grasp the idea that everybody cannot be supplied at once, or because prices are not extremely low, as it is to the fact that it is extremely difficult for the average business man at this time to gauge his needs. No matter what the cause, however, a most unfortunate situation is likely to result.

Best grades of steam coals and of lump gas are still on this market around $2@$2.40, while lower grade coals can be had at such prices that there can be no question of the fact that business men as a whole must know that now is the low buying period.

Anthracite — There is little change in the situation here. The public is still unconvinced that it is not to get coal at lower prices. Retail dealers are in a quandary what to do to straighten out public opinion and secure the amount of ordering that is so necessary in the next few weeks if there is not to be a most unfortunate congestion this fall and early winter.

BUFFALO

Trying to See Improvement in Soft-Coal Situation — Anthracite Inactive — Lake Shipments Heavy.

Bituminous—At least one of the Buffalo operators and jobbers announces that he can see an improvement in the demand for coal and he claims that it will be apparent to all before long. This sort of report is more or less common. It may mean something and it may be merely an echo of the ardent wishes of the coal man.

The fact is that here and there a slight stir is appearing. It may broaden into a general wave of business and it may not. The chances are that it will not, at least right away. The latest report from the iron trade is that there is no improvement. That means that coal must wait awhile yet.

With the greater part of the iron furnaces in this section shut down, it cannot be expected that coal will move any faster than it has done. All that can be done is to keep sales organization in good running order and wait for the stir. Meanwhile prices are dull and weak, except slack, at $3 for Youghiogheny gas lump, $2.75 for Pittsburgh and No. 8 steam lump, $2.50 for Allegheny Valley mine run and $1.75@$2 for slack, adding $2.36 to Allegheny Valley and $2.51 to all other coals to cover freight.

Anthracite—The trade drags, much as formerly. The consumer who has no coal will do nothing but complain of the high prices and claim that if he holds off till fall they will come down. Every coal shipper tells him that such a thing is not likely, but the daily press has set the mark and the consumer believes the report that is best suited to his notions.

Meanwhile the Chamber of Commerce is becoming uneasy and a meeting of anthracite interests has been called to see what can be done. Something of the sort was done last year, but it is hoped that more is possible now. The idea is that certain large consumers, such as churches, can be got out of the way before the rush comes, as it is sure to do before winter.

Shippers are sending much of their coal up the Lakes, breaking the record, week after week. The amount for the week ending Aug. 9 was 199,600 tons, of which 90,200 cleared for Duluth and Superior, 52,300 for Chicago, 18,500 for Fort William, 17,300 for Milwaukee, 10,500 for Sheboygan, 6,700 for the Sault, 3,000 for Racine and 1,100 for Cheboygan, Mich. Shipments for the season to Aug. 1 are 1,964,886 net tons, as against 1,528,662 tons to the same date last year.

Coke—With practically all the local byproduct ovens shut down, to the great inconvenience of city gas plants, and with the furnaces in this district as nearly idle as they have been in many years, the coke market maintains only bottom prices, $4@4.25 for 72-hr. foundry, $3@$3.25 for 48-hr. furnace and $2.75 for stock, with a little chestnut size for domestic use $5@$5.25, adding $3.64 for freight to Buffalo.

Northwest

DULUTH

Inland Movement Heavier—Lake Receipts in Good Volume—Ore Trade Shows Signs of Life

A boom in trade which promises to relieve the congestion and clear up the stagnant coal situation has been experienced here. During the past week dock men report that demand has improved even beyond their hopes, and that the prospect is bright for such a revival of trade as will permit shipments to continue coming to the harbor.

Lake receipts continued during the past week in much the same volume as before. Forty cargoes arrived in all, of which eight were anthracite. Twenty-two are reported on the way of which eight are hard coal. There is every likelihood that shipments will continue in this volume or even greater as iron ore shipments are picking up which gives down cargoes for the boats.

Dock men recently let it be known that they would refuse to "hold the bag" this year and did not intend to bring more coal to the Head-of-the-Lakes than could be consumed. Several of the larger companies have asserted that when once their docks are full they will stop shipments and will not continue them again, regardless of consequences.

It has been estimated that the bituminous supply on docks, together with the normal shipments coming in, will run this district through the winter without any danger of shortage.

Eight hundred thousand tons of anthracite are still lacking to supply the probable demand of this winter. Last month more than 300,000 tons came to the Head-of-the-Lakes. Four months remain in which to get up the necessary tonnage, and dock men say that, barring accidents, the needed amount will get here.

Prices remain firm as last quoted. Sellers are making no sacrifices and feel that the market will not sag. Anthracite is due for another 10c. increase Sept. 1, which will be the last advance this year.

MILWAUKEE

Better Interior Movement—State Officials to Investigate Coal Prices—Lake Receipts Lower—Vacant Yards being Stocked.

Because of intensive solicitation, together with a guarantee that prices will not go any lower than at present, there is a better movement of coal both in the city and to the country. Prices continue undisturbed. Reports are current that one dealer is cutting the schedule of Eastern soft coal, but if this be true, it has had no effect on the market.

The feeling that anthracite prices are too high is so strong throughout the state that Gov. John J. Blaine, Attorney-General Morgan and the State Department of Markets are making a sweeping inquiry in regard thereto. Milwaukee dealers are seemingly little disturbed by the announcement.

Receipts by Lake thus far in August aggregate 44,242 tons of anthracite, and 81,731 tons of soft coal, making the total since the opening of navigation 2,120,356 tons, of which 569,657 were anthracite and 1,550,699 soft coal. Last year's anthracite receipts during the corresponding period were 406,068 tons, and soft coal 693,788 tons. Indications are that the movement of coal up the Lakes will be more moderate as the season advances. It is expected, however, that stocks at Milwaukee yards

will be replenished at the rate of 60,000 to 80,000 tons per week, to keep pace with the outward movement. All available river frontage is being utilized for coal storage.

Inland West

CLEVELAND

Industrial Situation Improves—Demand for Coal Not Affected Yet—Lake Trade Slackens—Retail Demand Stronger.

Business conditions in this district have shown further perceptible improvement during the last week, with the cautious advances being made toward recovery from the extreme slump in the iron and steel industry. However, sufficient progress has not yet been made to find any considerable reflection in the coal trade. Companies who have felt the stimulus of bettering demand are inclined to wait more definite assurances that the upturn is not merely a temporary recovery before enlarging their schedules of production. In the meantime, stocks of coal at plants are at a point which will necessitate buying if trade activity continues to grow. Experiences through which the business community has passed in recent months, have bred caution in a superlative degree.

On the whole, however, underlying sentiment is better and the feeling pervades the coal trade that any changes henceforth will be upward. Coal men cite the evidence of strengthening commodity prices, and other developments as lending color to this view. Aside from the Lake trade, the coal market in this district has been unusually dull this summer, due to the wide-spread curtailment in steel. This industry and its allied lines is of supreme importance in and around Cleveland.

A better feeling prevails in the retail trade also, with the appearance of more buying as the summer wanes. The city board of education has let contracts for 25,000 tons of coal for school buildings. This coal has been allocated to nearly all of the dealers in the city.

Steam slack continues strong, being quoted $1.70@$1.85 a ton. Mine run spot prices range $2.25@$2.30 and lump coal is selling $2.60@$3.00.

Due to lessened Lake coal shipments the output of the Eastern Ohio mines is lower. Lake dumpings last week were 698,781 tons. The total movement for the season up the Lake to date has been more than 14,000,000 tons, nearly twice last year's total for the same period.

Bituminous coal receipts for industries and retailers at Cleveland, during the week ended Aug. 6, amounted to 557 cars, divided; industrial 417, retail 140; as compared with a total of 546 cars the previous week. This is only about 40 per cent of Cleveland's minimum requirements during normal times.

DETROIT

Buying Continues Sluggish—Shipments Are of Small Volume—Little Free Coal Available—Anthracite Demand below Normal.

Bituminous—Efforts to stimulate interest of consumers in offerings of bituminous coal are not yet productive of encouraging results in either steam or the domestic sections of the trade. Buying is still of small volume.

Many of the large steam consumers seem to be restricting their purchases to quantities sufficient for satisfying only a few days' requirements. As manufacturing plants in many instances are running on schedules which make possible a large reduction in their normal fuel consumption, the volume of sales is at a low level.

A number of establishments have been able to accumulate small reserves. It is believed that resumption of normal industrial activity would clear away these reserves speedily. Jobbers feel that such a development would be quite likely to find Detroit coal users confronted with a serious shortage in coal supply and that the mines probably would be unable to provide coal in sufficient quantity to prevent troublesome complications from ensuing.

The small volume of buying by household consumers provokes sharp criticism. Many domestic consumers, now out of employment, are perhaps unable to stock up, but jobbers place stress on the contention that were those who are not so handicapped to place their orders now, it would aid materially in reducing stocks in yards of retailers. This would relieve the pressure on distribution later in the year and would enable the dealers to bring in additional supplies to provide for requirements of those who by force of circumstances, may be obliged to defer their buying to a later date.

Smokeless lump and egg is quoted $5.25, mine run $3, slack $1.50@$2. Ohio domestic lump is $3.25, 1¼-in. lump $3, egg $2.75, mine run $2.50, nut and slack $1.50. West Virginia 4-in. lump is $3.25, 2-in. lump $2.90@$3, egg $2.75, mine run $2.15, nut and slack $1.50.

Anthracite—Only a small proportion of the normal distribution has been made to household consumers. The backwardness of buyers is ascribed to the high retail prices, ranging $14.25@$14.75, and the expectation that reduction in freight rates or some other change in existing conditions will result in lower prices.

ST. LOUIS

Conditions Show Slight Improvement, Both Steam and Domestic—Country Business Picking Up—Retail Stocks Very Heavy—Prices Unchanged.

A little better tone to the country domestic market is about the only change here. There has, however, been some ordering on the part of the domestic consumer, but this is so small that it has not yet become a factor. Indications are that it will soon get under way as fall approaches. Dealers are continuing to keep their yards loaded, but buying is so limited that they are unable to take in much additional coal.

Steam conditions are showing some improvement, but only in a small degree so far. A little storage coal is coming in here and there.

Smokeless and anthracite is slow and no Arkansas coal is moving at all. The coke situation is showing a little activity. Retail prices are as yet unchanged.

CINCINNATI

Fall Purchases Delayed — Steam Sizes Decline—Smokeless Market Uncertain.

Possibilities of a reduction in freight rates and governmental activities that tend toward that end have been seized upon by the large buyers here as an excuse against ordering any great stock of coal for early fall delivery. Business that has been anticipated from this source, therefore, has fallen flat. Country dealers' orders have been a little better.

The recent slight advance in slack prices have failed to hold, and Kentucky again has a range of $1@$1.25 and West Virginia $1.25@$1.35.

Mine run has been a bit better in demand. Most of the sales were around $1.75, a ten-cent advance. West Virginia lump can be bought $2.75@$3, with better grades and future deliveries going as high as $3.75. Kentucky block dropped to $3@$3.25.

The uncertainty of the smokeless market has been reflected in the lump prices which are now being quoted at $5. Slack took another tumble to $1.50 @$2.25, and mine run to $2.50, with a dollar range upward for coal that is being held by old-line producers. Nut is quoted $4@$4.25.

The retail market received a little encouragement this week. Householders are showing some disposition to put coal away now that fall may catch them unprepared. There has been no change in the price situation.

COLUMBUS

Slightly Better Domestic Demand—Steam Business Still Slow—Lake Tonnage Dropping.

It is now the time for consumers to secure their winter stocks and some are following the usual rule. But the movement is not as general as in previous years. There is a prevailing feeling that freight rates will be reduced and that this will be reflected in the price. Another reason is that many consumers have not the money to pay for their coal and the retailer is unable to extend any further credit as he is growing short of ready cash.

Retail prices are fairly steady at former levels. Hocking lump sells around $6.50, while the re-screened

varieties are about 25c. higher. West Virginia splints are $7.50 and Pocahontas is $9.50@$10. Anthracite ranges $14.50@$15.

The Lake trade is gradually slowing down although loadings at the docks do not indicate such a falling off. But as far as Ohio coal is concerned, the Lake outlet is plugged. Producers believe this will be only temporary and they are expecting a lively movement in the fall.

Steam trade is extra slow and the market is the weakest in months. There is considerable distress mine run on th Columbus market. Railroads are not taking much tonnage and manufacturing concerns are slow in resuming operations.

Production is still at a low point and little improvement is expected until the domestic trade shows more activity. The Hocking Valley, Crooksville and Cambridge fields report about 22 per cent output. In the Pomeroy Bend district the output is about 25 per cent.

South

BIRMINGHAM

Temporary Improvement in Steam Demand—Domestic Mines Suffer Sluggish Market—Quotations Stationary

Inquiry for steam coal was slightly on the increase the first part of the week and the movement was a little better than for some weeks past, but the trade has again settled down and is quiet and listless. There is a good deal of surplus coal in cars, which is being disposed of slowly and with difficulty. Outside of the starting up of a few oil mills, consuming sources have not been augmented.

Mine run quotations f.o.b. mines are as follows: Black Creek $2.75@$3, Cahaba $2.50@$3, Carbon Hill $2@$2.40, Big Seam $2@$2.25, Pratt $2.50@$3, Corona $2.25@$2.50, Jefferson $2.25@$2.50.

Consumers are not buying their winter coal to any extent as yet and domestic mines are having to curtail operations as dealers decline to take their regular contract quotas. That dealers will be unable to supply the coal demanded when winter weather arrives is the unanimous opinion of coal men as the necessary equipment for moving will not be available. Domestic quotations are unchanged.

LOUISVILLE

Retail Movement Growing — Prices Firm—Conditions Improve Slowly.

It is reported that demand for prepared sizes is somewhat better, orders and inquiries being more active, as retailers are buying with more confidence. In the period from April through June, retailers stocked a good deal of prepared coal, when the market ranged $3.50@$4, and then saw it slump to $3@$3.50, which destroyed confidence. However, there was some summer stocking, which reduced holdings of higher-priced fuel, forcing the retailers back into the market, in view of the fact that prices have been advancing since the low level was reached in July.

In filling retailers' requirements for prepared sizes there may be some increased production of screenings, which will tend to lower the market. It is claimed that mine run is at rock bottom, and operators will close down rather than sacrifice at a lower price.

There is a more optimistic spirit shown in the coal trade, as it is held that the turning point has been passed, and from now on business will be better. Industrially, things are still quiet, but showing improvement.

Machine shops, metal working and hardwood lumber industries are very slow, with many plants down, but other industries are fairly active. In Louisville, industry is greatly diversified, and building operations have been fairly active, which has also aided in absorbing labor.

West

DENVER

Markets Dull—Production Low—Agitation for Municipal Retail Yard.

With the output still 60,000 tons a week behind last year's record, and retail markets showing a corresponding dullness, operators and retailers are wondering just how the demand will be supplied when the heavy trade begins. In addition, retailers are facing troubles in the issue of a proposed municipally operated retail yard here, urged by those who think the coal users are being treated unfairly.

The city is still getting coal from a mine under lease, but the service from this mine is now restricted to municipal buildings. The new plan is to take up coal land on four sections of unappropriated federal land, in accordance with the act of Feb. 25, 1920.

An early adjustment of the claims for back pay held by some of the miners in the Big Six and Red Ash mines in northern Colorado is likely, pending which the mines will continue operation. There is an attempt to force the closing down of the mines until Carl De Lochte, state labor commissioner, recently addressed the men. He told them that those who had legitimate claims would receive the amount due them, but that any foreigners who interfered with operation of the mines would be turned over to the Federal authorities for the institution of deportation proceedings.

Canada

TORONTO

Trade Still Quiet but Improving—Large Supplies on Hand—Shipment Received from Nova Scotia.

Although trade continues quiet there is a slight improvement and orders for fall and winter supplies of anthracite are beginning to come in more freely. Yards have large supplies on hand of all grades except stove of which there is a chronic shortage.

A shipment of 2,200 tons of Nova Scotia coal recently arrived here by water. This is regarded as exceptional rather than as a forerunner of any extensive trade, although large expenditures on improvements of the harbor are making it accessible to ocean going vessels.

Quotations for short tons are as follows:

Retail:	
Anthracite, egg, stove, nut and grate	$15.50
Pea	14.00
Bituminous steam	11.00@11.50
Domestic lump	12.25
Cannel	16.00
Wholesale f.o.b. cars at destination:	
¾-in. lump	7.75@ 8.50
Slack	6.00@ 6.75

News From the Coal Fields

Northern Appalachian

ANTHRACITE

Duller Markets Reflected in the Output — Labor Troubles Disturb Running Time.

A further reduction in output appears inevitable. Labor troubles are developing and production is being further whittled down by the waning demand. A number of independents are entirely closed down while others are operating part time.

No improvement is expected during this month and it may be the middle of September before the demand picks up.

UNIONTOWN

Coke Market Shows Stability—Slack Coal Scarce — Other Sizes Sluggish — Returning Business Will See Keen Competition.

While the coal and coke trade continues to live on hope, the prospects are accumulating each week that something more tangible will reward their consistent policy of optimism. Returning business will see competition the keenest in history but there will be few reckless moves, as witnessed this week by a firm quotation of $3 for furnace coke. During the past several weeks a number of odd-lot sales have been closed at $2.75 but the interest created in contracts recently made, together with the budding inquiries which may bloom into contracts, has caused

operators to resist a price below $3. Foundry coke is active at $4@$4.25 with most of the spot tonnage being bought by Western consumers.

A rather nebulous condition prevails in the coal market as regards slack and prepared sizes. While there is an active slack demand by cement concerns there is practically no call for the ¾-in. As a result, quotations of slack took a jump from a range of $1.50@$1.75 to $1.65@$1.90. Lump on the other hand took a slight drop, being quotable at $2.25. There is practically no demand for other grades handled in the Connellsville region.

PITTSBURGH

Little Business Except in Gas Coal—Competition of Non-Union Districts—Steel Corporation Using Connellsville Instead of Pittsburgh Coal.

Competitive conditions between the Pittsburgh and nearby non-union districts show no particular change. Current market demand continues very light and is going to the non-union fields in most cases, the prominent exception being in gas coal, a market that the Pittsburgh district can keep largely to itself.

Production of slack is decreased farther by the decline in shipments in the Lake trade, and is working up toward the level at which mine run is held, a difference being that the slack production is bought freely while there is very little buying of mine run steam coal, which presents a market that is almost nominal.

Operations at the steel mills have been increasing slightly, but the steel industry is taking only a little more coal from the Pittsburgh district. Since the termination some time ago of the long-term contract between the Pittsburgh Coal Co. and the United States Steel Corporation the latter seems to be getting coal instead from the Connellsville region, chiefly from its own mines there, attached to coking plants, with some purchases from other operators.

Nothing new has developed in the matter of wages. While the men are very poorly employed they are making no definite move to remove the disadvantage they are under by reason of the competition of non-union districts.

Prices are largely nominal, there being scarcely any transactions: Slack, $1.65@$1.75; steam mine run, $2@$2.15; ¾-in. steam, $2.25; gas mine run, $2.20@$2.35; gas lump, $2.60@$2.80 per net ton at mine, Pittsburgh district.

CONNELLSVILLE

Market Very Dull Except for One Inquiry—Prices No Lower—Soft Coke Brings Fair Figure.

Following the occasional transactions in the past few weeks in furnace coke there is nothing new this week except an inquiry for 10,000 tons for September for a blast furnace at Columbus that may possibly be started. The majority of operators will not quote as they expect a few sellers to name prices they would not care to consider, i.e., prices of $3 or possibly a trifle less. The actual limit of some operators seems to be $3.25, while others are talking of $3.50, although they might split the difference between that and $3 if they saw a chance of securing a contract that would justify their blowing in some ovens.

Spot furnace coke business is confined to small lots, chiefly carloads, for miscellaneous consumers, and this market is a shade stiffer, $3 being often obtained from dealers, who add a margin besides, but this is for particularly good coke. On the other hand first drawings and other soft coke are sometimes sold at $2.75 or less and are reported in some quarters as being sales of standard furnace coke. For a good grade of soft heating coke $2.75 can be obtained.

Buying of spot foundry coke shows a slight improvement, though the movement is still relatively light. Sales at less than $4 are believed to be off-grade material.

The market remains quotable as follows: Spot furnace, $2.90@$3; contract furnace, $3; spot foundry, $4@4.50, per net ton at ovens.

EASTERN OHIO

Production Off—Lake Trade Dropping—More Interest in Fall Deliveries—Domestic Market Active.

Notwithstanding that Ohio's industrial situation showed a slight turn for the better during the week, a slowing down in Lake shipping overbalanced any improvement in the coal trade from other directions and production declined some 22,000 tons. Aggregate output amounted to 378,685 tons. Production for the year to Aug. 6 is estimated at 10,344,043 tons, which is 54 per cent of rated capacity for that period.

Railroads are taking a little better than 35 per cent of the output for fuel and there are indications that some lines are doing a little stocking in anticipation of fall and winter requirements.

Reports are being received that interior buying in the Northwest, both from industrials and railroads, is showing some new life. However, the opinion is that unless the Northwest market takes coal from the docks, thus relieving the congested storage situation, Lake shipping must show an abrupt falling for the balance of the season.

Eastern Ohio producers, having West Virginia operations supplying trade in the East, state that inquiries from the East are decidedly better than from the Middle West, from which it may be concluded that industrial revival in the East is being felt more perceptibly than throughout this section.

Operators say that contract and spot inquiries are somewhat better than during previous weeks. There is more slack available but the price has held pretty much near the figure to which it recently stiffened.

While operators may not be said to be optimistic, retailers are more hopeful and report domestic demand much improved. The retailer's season is fast approaching and the recent unfavorable developments in the natural gas controversy in Cleveland will no doubt cause many domestic users of gas to give more serious consideration to burning coal.

UPPER POTOMAC

Unprecedented Sluggishness — Mine Closings Increase—No Business Available.

Mine closings were even more common during the first week of August. Competition of the non-union fields to the north was being felt very keenly and not even inquiries were being received. Such a slack condition of affairs was almost unprecedented in the history of the field.

FAIRMONT AND PANHANDALE

"No Markets" Further Curtail Production—Lake and Tide Shipments Wane—Prices Soft.

FAIRMONT

Production during the week ended Aug. 6 was lower than at any time during the year, idleness growing throughout the week. Shipments dropped from day to day with little or no coal moving to Tidewater or Lake.

NORTHERN PANHANDLE

Diminishing demand tended to still further curtail production during the first week of August. As shipments to the Lake declined it was almost impossible to market any coal. Tidewater shipments were at a standstill. Prices offered, in most cases, were too low for acceptance.

Middle Western

SOUTHERN ILLINOIS

Some Improvement Noted—Domestic Orders Increase—Prices More Stable—Car Shortage Indications Appear.

There is a little improvement in the Carterville field except on nut. Chicago has picked us some on the movement of screenings, and lump at many places is scarce, being oversold, while egg is about even. Nut is a problem that has not been solved.

The first indication of future car shortage is appearing right now, especially on the Illinois Central, and if the movement of coal begins at all early—and the chances are that it will get underway pretty well before the end of the month—by the first of September car shortage will again be a factor of production.

Prices seem to be more stable on lump and egg. Independents are gradually drawing closer to the $4.05 price on lump and many of them are holding egg at that. The nut market, however, is down below $3, with screenings $1.25

@$1.50. Mine run prices are at variance. Railroad tonnage is showing up fairly well. Independent prices on lump are occasionally as low as $3.50.

The situation in the Duquoin field shows some improvement, while Jackson County operating conditions are continually growing better. Prices are somewhat the same as those prevailing in the Carterville field.

Some improvement was noted last week in the Mt. Olive district but not to any marked extent. No changes reported from last week in prices.

The Standard situation shows some improvement, especially in the movement of coal to the country west of the river. Conditions, however are not as satisfactory as they should be. Screenings are still around the dollar mark, with 2-in. lump at $2 and up and 6-in. lump $2.50@$2.75, and getting stronger. Nut, however is a drug on the market and steam egg somewhat similar, both of them selling from $2 upward.

Mines are averging a little bit better working time, although at many places unbilled cars are causing trouble. Railroad tonnage shows some improvement in this district.

WESTERN KENTUCKY

Slightly Better Movement — Prepared Sizes Improving — Good Outlook for Fall

Movement has been better during the past week, and prospects are for a heavier demand as the fall advances. Retailers are placing more orders and making more inquiries for prices. Operators are having no difficulty in disposing of screenings, regardless of the fact that general industrial demand is not strong.

There is not much development activity just now as some of the larger operators are not running all of their mines, demand not having reached a point as yet where they can market full production.

Operations are averaging around two days a week, some of the larger companies working full time at such of their mines as are being operated at all.

INDIANA

Better Market Tone Developing—Industrial Consumption Improving Slowly—Prices Unchanged.

There is a much more optimistic tone to the market. There appears to be a decided increase in inquiries from industries and retailers report more domestic call.

Gas utilities are still piling up coke, for which there is no call and this is being sold as low as $8 on a contract basis. Most of the municipalities and county units are taking bids for public coal and this has created a new demand. This action is later than is usual and some bargain bids are being reported.

Many of the industries throughout the state are reporting more production than for months, although the industrial situation is far from satisfactory. Operators are rather inclined to the belief that it will be the middle of September before any real demand begins. There is considerable activity among the railroad repair yards in an effort to get sufficient coal cars in good order to minimize the danger of a coal famine.

Middle Appalachian

HIGH-VOLATILE FIELDS

Weak Markets Cut Production—Lake and Tide Demands Slump—Some R.R. Fuel Activities.

KANAWHA

Dullness was even more pronounced during the first week of August, the output being limited to about 30 per cent of capacity. Tidewater movement was difficult at any price and there was little or no Lake demand.

LOGAN AND THACKER

Logan production likewise declined and was limited to a few companies, most of the mines being shut down because of "no markets." Some coal was still being stored but in limited quantities only. Eastern and Lake markets afforded no outlet and prices were softening from former levels.

Reduction of Thacker production kept pace with the other high-volatile fields, although there was better output proportionately because of the railroad fuel tonnage needed. However, production did not exceed 40 per cent of capacity.

NORTHEASTERN KENTUCKY

General market conditions were unimproved, domestic demand was at a standstill, and industrial buying was very irregular. Operations were confined to not more than two days. Screenings were comparatively firm but lump and mine run prices softened a trifle.

VIRGINIA

"No market" losses made it impossible to increase production, which remained on a basis of three days per week. Smaller concerns without contracts found little encouragement in the situation. Coke production was almost negligible.

LOW-VOLATILE FIELDS

Sluggishness at Tide Affects Production — All Demands Weaker — Dull Month Predicted.

NEW RIVER AND THE GULF

New River production was further curtailed in the first week of August, as it was increasingly difficult to find an outlet for coal. Tidewater prices were not in excess of $5.50 at Hampton Roads and even at such low figures little tonnage was being moved.

Inability to secure orders necessitated a like suspension in the Gulf region. There had ceased to be any Tidewater demand and it was equally as hard to dispose of coal in other markets.

POCAHONTAS AND TUG RIVER

Although there was a material decrease in the Pocahontas production, operators felt they were doing better than in neighboring fields, with activity listed at about 40 per cent of capacity. Producers did not seem to be much concerned as to the prospect for business a little later. There was a rather small Tidewater movement and only very few spot sales.

Although a decline was registered in the Tug River field, production held up to a greater extent than had been anticipated. It was believed that dullness would continue through August, when some improvement might be looked for.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Domestic Trade Reviving—Southern Market Relieved of Over Production.

A good deal more enthusiasm is being manifested among coal operators, indications being that the worst is over and that the fall demand will soon begin. Already there is more activity, especially in the domestic trade.

Prices remain about the same, good block being sold $3.50@$3.75; egg $3.10@$3.25; mine run, $2.25@$2.40 and screenings $1.50@$1.75.

It has been rumored that several of the large operations in Harlan and Bell counties, owned by consumers in the North and Northwest who have had their coal on the Southern market, are beginning to divert it to their own plants, thereby relieving the already overburdened market of this coal.

West

UTAH

Storage Demand Grows—Heavy Retail Stocks on Hand.

Demand for storage coal continues to improve slightly. Consumers seem to be convinced now that prices are not coming down, but so far they are not crowding dealers with orders. Last year a vigorous campaign was carried on, which succeeded in filling most of the coal bins before cold weather came, with the result, due to the mildness of the season, that many consumers who expected to have to place another order in February had some coal on their hands in May.

Coal on hand in the yards of Salt Lake City is growing and now amounts to approximately 100,000 tons. The car situation, which was reported last week as likely to be serious, is showing signs of improvement.

MINE And COMPANY NEWS

ALABAMA

Figures compiled from available data on coal production in Alabama for the first six months of 1921, show an output of approximately 5,500,000 net tons, which is about 2,000,000 short of what it should be to attain the record of last year, of 15,306,440 net tons, the lowest production since 1915. The poor showing is due to the extremely dull market which has prevailed throughout this year.

ILLINOIS

The Consumers' Co., the largest retail dealer in coal in Chicago, has recently formed a merger with the **Cook County Supply Co.**, dealers exclusively in building material. It is said that from five to seven million dollars are involved in the deal. The Consumers' company now practically controls the crushed stone and gravel producing business in and about Chicago. Also the Cook County Supply Co. is almost independent of railroad transportation, as it operates its own docks together with a boat line for handling the stone from the quarries to the main distributing points. The subsidiary companies affected by the merger are as follows: United States Crushed Stone Co., McCook; Argo Stone Co., Argo; Illinois Stone Co., Lemont; Universal Stone Co., Racine; Lake Shore Sand and Gravel Co., Algonquin; Federal Sand and Gravel Co., Beloit; Producers' Material Co., the Agricultural Brownstone Co., the Artesian Stone Co., and the United States Building Material Co., all of Chicago. Wm. H. Leland, vice-president of the Consumers' company, has resigned to engage in other business. His successor is H. M. Hallock, who up to now has been president of the Cook County Supply Co., and its subsidiary organizations.

INDIANA

W. D. Curl, of Petersburg, has been named state agent for the **Enos Coal Mining Co.**, an Ohio corporation. The company recently filed papers with the secretary of state which will permit it to transact business in Indiana and it plans to mine and deal in coal and coke.

Liabilities amounting to $43,326.36 and assets of $33,349.37 are listed in a voluntary petition in bankruptcy filed in the Federal Court by the **Etnica Coal Co.**, of Clinton. The petition is signed by Vincent Verde, president of the company.

The Robinson Brothers Coal Co., of Linton, is operating a new mine on the Thurman Jeffries farm, near Lyons. The mine is equipped with modern machinery and 100 men are to be employed.

KENTUCKY

The Maginnis Brothers, formerly engaged in the coal mining industry at Windber, Somerset County, Pa., are interesed in a new coal company recently organized in Morganfield, Union County. John V. Maginnis will be manager and Joseph B. Maginnis will serve as secretary-treasurer. The new company has been incorporated as the **Morganfield Coal and Coke Co.** They have taken over all the holdings of the **Morgan Coal & Mining Co.**

The Harlan Coal & Coke Co., High Splint, Harlan County, capital $25,000, has filed amended articles increasing the capital to $100,000, the debt limit being of the same amount.

MINNESOTA

Dean Appleby and Professor W. H. Emmons, the former of the school of mines and the latter of the department of geology of the University of Minnesota, have arrived in Yokohama, on their trip to Manchuria, investigating the coal deposits of that country.

The new 500-ft. extension of the **Inland Coal and Dock Co.'s** receiving dock at Duluth is now complete and coal is being dumped.

The Fuel Supply Co., of Minneapolis, is a new corporation, formed for the purpose of handling fuel, and for prospecting for ores. The capital stock is $50,000.

The Boston Coal Dock will have a 300-ton class scales capacity when rebuilding is completed.

New track scales, which will accommodate loadings up to 300 tons, are being installed at the **Carnegie Dock and Fuel Co.**, in Duluth. These will replace the present scales, which have a capacity of 150 tons.

NEW YORK

The Building Managers' and Owners' Association of New York has sent a circular to its members advising them to buy coal now. In its circular, the fuel committee of the association asks the members to give the matter serious attention, saying: "We can help the miner, the operator, the railroad carrier and ourselves by buying coal now."

Cosgrove & Wynkoop Coal Co. has just opened an office at 133 Fenchurch St., London, England, with C. Brooman White as resident manager. Mr. White was interested in American & English coal companies prior to the war, when he was one of the British officers in charge of supplies at New York.

OHIO

The C. D. Grimes Coal Co. has been chartered with a capital of $25,000, to mine and sell coal in the Tuscarawas district. Among the incorporators are William Loveday and A. J. Loveday.

The Packard Coal Mining Co., of Columbus, which had been in existence for several years, has been reorganized by combining the **Packard Coal Co.**, also a Columbus concern, in one corporation. The Packard Coal Co. was a mining company and the Packard Coal Mining Co. a jobbing concern. Under the reorganization the authorized capital is $250,000 instead of $50,000. Officers are M. L. Yuster, president; C. F. Bookman, secretary, and H. S. Reddel, treasurer.

PENNSYLVANIA

The Everson car shops of the **H. C. Frick Coke Co.** resumed operations Aug. 1 after a suspension of two weeks.

The following Pennsylvania charters have been approved by the Governor: **Brydon-Crane Coal and Coke Co.**, Philadelphia, buying, selling and dealing in coal and coke; capital stock, $50,000; Howard P. Brydon, Piedmont, W. Va., treasurer. Incorporators: Howard P. Brydon, Piedmont, A. B. Crane, Wayne and Leighton P. Stradley, Land Title Building, Philadelphia. **Stackhouse Coal and Feed Co.**, Burmont, Delaware County, buying, selling and dealing in coal, feed, lime and cement; capital stock, $10,000; James J. McShane, Oakview, treasurer. Incorporators: James J. McShane, Oakview, John S. Roberts, Franklinville, N. J., and Thomas F. Slattery, Philadelphia. **Manayunk Coal Co.**, Philadelphia, buying and selling coal, feed, lime and cement; capital stock, $10,000; John D. Kelly, Wissahickon, Philadelphia, treasurer. Incorporators: John D. Kelly, John S. Roberts, Franklinville, N. J., and Thomas F. Slattery, Philadelphia. **Angora Coal and Supply Co.**, Philadelphia, buying, selling and dealing in coal, feed, lime and cement; capital stock, $60,000; Cyril A. Slattery, 1008 South 46th St., Philadelphia, treasurer. Incorporators: Cyril A. Slattery, Frank P. Logan, 219 South 61st St., Philadelphia, and John S. Roberts, Franklinville. **Gould Coal Co.**, Pittsburgh, mining, selling and preparing coal and coke; capital stock, $10,000; G. F. Bauersmith, Pittsburgh, treasurer. Incorporators: George C. Blackmore, Edgewood, John A. Gould and A. J. Gould, Avalon. **Slattery Brothers, Inc.**, mining, transporting, buying and selling coal, Philadelphia; capital stock, $100,000; Thomas F. Slattery, Philadelphia, treasurer. Incorporators, E. C. Kervin, Philadelphia; John S. Roberts, Franklinville, N. J., and Thomas F. Slattery.

WEST VIRGINIA

The Abram's Creek Coal & Coke Co., the **Osage Coal Co. and the Monongalia Coal Co.** have been merged and have become a part of the **Brady Coal Corporation** of Fairmont, the details of the consolidations having been perfected at a meeting of the boards of directors of the various companies held at Fairmont, when the capital stock of the Brady Corporation was increased from $2,000,000 to $6,000,000. Acting as chief counsel for the corporation, former Governor Cornwell looked after the legal phases of the consolidation, which brings under the control of the Brady Corporation, in addition to the six mines of the various companies, about 9,000 acres of coal, much of which is in the Pittsburgh seam. Offcers of this corporation are: S. D. Brady, president; A. P. Brady, vice-president; S. D. Brady, Jr., secretary and treasurer; James Close, assistant to the president.

Chartered by A. W. Simpson, of Mount Claire, and James A. Meredith, of Fairmont, the **Helens Run Collieries Co.** will mine coal in the Fairmont district. The capitalization is $250,000.

The Yorkville mine of the **Ohio & Pennsylvania Coal Co.**, located near Wheeling, is to be equipped with a new tipple and shaker screen. A heavy type railroad car retarder for a heavy grade is also being installed, the rope being seven-eighths of an inch thick.

Organization of the **Swiss Bi-Product Coal Co.**, of Charleston, presages development of coal lands at Swiss, Nicholas County, on a large scale. This new concern being capitalized at $300,000. This company's property is on the Kanawha & Michigan. Leading figures in the newly organized concern are: F. C. Fifer, F. Horace Fifer, of Charleston; M. I. Hill, Swiss; Joseph Waldman, New York, N. Y.; C. F. Hardesty, Hartford, W. Va.

The Tug Valley Fuel Co., of which W. P. T. Varney of Williamson, is president, has increased its capital stock from $50,000 to $100,000. **The Thermal Coal Co.**, on the other hand, has decreased its capital stock from $600,000 to $5,000.

The Turkey Gap Coal & Coke Co., Dott, has contracted for the complete installation of a new steel tipple at their Wenonah No. 1 mine, at Wenonah. This tipple will be complete with Marcus screens, retarding conveyors, and shaker loading booms, together with refuse disposal machinery.

The Wyatt Coal Co., of Charleston, won its suit against the **McBard Coal Co.**, Cincinnati, in the Superior Court, Cincinnati, for recovery of $6,000 for coal shipped. A counter suit for $20,000, based on breach of contract, was ignored by the jury. Defendant in the original suit has given notice for a new trial.

BRITISH COLUMBIA

Statistics of production for the first half of 1921 as compared with the same period of the previous year are not satisfactory. In 1920, the first half year's production totaled 1,367,502 tons. This year's figures are 1,231,406 tons. The decline was not peculiar to any particular section.

The White Lake Collieries Ltd., capitalized at $400,000, has been incorporated to open up coal lands situated some fourteen miles north of the town of Keremeos, Nicola-Princeton Coal Field. Benjamin Barlow has been appointed manager of operations. It is the intention to install the plant necessary to begin and to maintain production on quite a substantial scale.

Traffic News

In the complaint of the **Commerce Club of St. Joseph,** relating to rates on coal from points in Illinois to St. Joseph, Mo., the **Central Illinois Coal Traffic Bureau has been** authorized to intervene.

The Utah Public Utilities Commission has ordered the Utah Ry. to put into effect joint through rates Sept. 1 to all points in Utah reached by the road and its connections from the coal mines of the three Spring Canyon coal companies on the Utah Terminal Ry. The effect of the decision is to give the coal companies two railroad connections with at least a portion of their markets.

In the complaint of the **Tuffil Bros. Pig Iron and Coke Co.,** the I. C. C. decides that the charges on smithing coal from Douglas, W. Va., to Chicago, reconsigned to Oakdale and Los Angeles, Cal., were reasonable.

In the tax revision hearings before the House Committee on Ways and Means, representatives of the Committee of Manufacturers and Merchants on Federal Taxation of Chicago advocated the Keller bill imposing a tax on land, which would include coal land.

The I. C. C. has issued a report for class one steam roads for May, 1921, showing coal consumption in road service, both freight and passenger service, as follows: **Freight**—Tons of coal consumed, New England region, 179,409; 165 pounds of coal per thousand gross ton-miles; Great Lakes region, 842,280 tons, 140 pounds of coal per thousand gross ton-miles; Ohio-Indiana-Allegheny region, 1,200,733 tons, 151 pounds of coal per thousand gross ton-miles; Pocahontas region, 307,735 tons, 136 pounds of coal per thousand gross ton-miles; Southern district, 809,463 tons, 163 pounds of coal per thousand gross ton-miles; Northwestern region 628,889 tons; 162 pounds of coal per thousand gross ton-miles; Central Western region, 940,396 tons, 159 pounds of coal per thousand gross ton-miles; Southwestern region, 462,631 tons, 153 pounds of coal per thousand gross ton-miles; total, 5,362,536 tons and 153 pounds of coal per thousand gross ton-miles. **Passenger service**—New England, 148,615 tons and 99 pounds; Great Lakes, 360,701 tons and 110 pounds; Ohio-Indiana-Allegheny 538,306 tons and 109 pounds; Pocahontas. 66,206 tons and 128 pounds; Southern, 369,838 tons and 106 pounds; Northwestern, 361,243 tons and 108 pounds; Central Western, 449,170 tons and 101 pounds; Southwestern region, 199,128 tons and 92 pounds; total, 2,493,207 tons and 105 pounds.

The Denver & Rio Grande R.R. has asked the Utah State Public Utilities Commission for permission to reduce its rates on coke from Sunnyside 25 per cent, same being the increase which went into effect last fall.

The Utah Ry. is ordered to refund to the **Lion Coal Co.** $15,054.83 collected in coal shipments from the Wattis mines as switching charges between June 1, 1919, and May 31, 1921. When the Wattis mines were first opened a spur was built by the mining company to the Utah Ry. Co.'s tracks and the carrier charged a switching service. In an appeal to the I. C. C., the company was upheld and the switching charges were declared illegal, insofar as they affected interstate commerce. The order of the Utah commission affects intrastate commerce and upholds the same stand taken by the interstate commission favoring the coal company.

The hearing before a special examiner of the I. C. C. on the complaint filed by the **Southern Ohio Coal Exchange,** seeking to change the differential on freight rates between the inner and outer crescents of West Virginia as compared with the rates from Ohio fields, has been postponed until some time in September.

Personals

W. A. Marshal, of W. A. Marshal & Co., was a visitor in the Morgantown market during the third week of July.

Carl Scholz, Thomas W. Clagett, J. S. Cunningham and C. E. Krebs have been designated by President Edwin Ludlow, of the American Institute of Mining Engineers of New York, as an organization committee in connection with the organization of a section of the institute at Charleston, having a charter membership of twenty-eight. Mr. Scholz will act as the chairman of the organization committee.

The Hudson Coal Co., announces several changes which became effective July 1, and also the consolidation of the Lackawanna and Luzerne districts. **R. H. Buchanan,** who was acting general superintendent of Luzerne district, has been appointed assistant general manager in charge of operations. **R. Y. Williams,** former general superintendent of the Lackawanna district was made assistant to the vice-president and general manager, and **J. F. Brown** was appointed assistant to the general manager in charge of engineering.

The position of general manager of the West Virginia operations has been created by the Consolidation Coal Co. and **C. H. Tarleton,** of Fairmont, manager of the West Virginia division of the company, has been advanced to fill this position. This marks another step upward for Mr. Tarleton in a service with the company ranging over a period of 30 years.

The appointment has been announced of **John O. Brooks** as acting superintendent of mines Nos. 21 and 91 of the Consolidation Coal Co., succeeding **James H. Nuzum,** resigned.

The appointment of **John T. Fallon** as superintendent of the Bower plant of the West Virginia Coal & Coke Co. has been announced, Mr. Fallon succeeding **R. F. Cole,** resigned.

J. G. Bradley, of Dundon, was in Chicago during the latter part of July attending a meeting of the directors of the National Coal Association, of which he is president.

W. G. Lee, one of the district mine inspectors in southern West Virginia, is in the northern part of the state, having joined Inspector S. E. Hawkshaw in some of the work he is doing. Mr. Lee was formerly located in northern West Virginia.

James W. Paul, of Pittsburgh, who was for twelve years the chief of the West Virginia Department of Mines, and who is now with the United States Bureau of Mines, was a visitor in Charleston during the meeting of the Mine Inspectors' Institute of America.

A recent visitor in the Huntington market was **E. Shein,** a well-known Mingo County operator, whose headquarters are at Williamson.

Industrial News

Cincinnati, Ohio.—Two changes of location of offices took place Aug. 1. The Amherst Coal Co. moved from 2604 Union Central Bldg., to 815 Dixie Terminal Bldg. and the Monarch Coal Co. from the eighth to the third floor of the Union Trust Bldg. The Emmons Coal Mining Co. has closed its local office.

New York, N. Y.—W. S. Murray, who was chairman of the Superpower Survey, and Henry Flood, Jr., his engineer-secretary in this work, have recently formed a partnership, under the firm name of Murray & Flood, Engineers, Grand Central Terminal.

Washington, D. C.—The Interior Department has approved and will shortly issue regulations governing the lease of public coal lands under the Leasing Law, which will be administered by the Bureau of Mines. They insure conservation of government coal lands and the protection of the government's interest therein, the government to act as a partner with the operator. Care has been taken not to conflict with State laws. The regulations were drafted following conferences with coal operators.

Obituary

D. L. Tuttle, whose death occurred Aug. 5, was held in high esteem by those who knew him personally. Even those who knew him casually were attracted to him by his kindly disposition. He was the Buffalo sales agent of the Philadelphia & Reading Coal & Iron Co.

Wm. J. Hand, superintendent of the Margaret Mines of the Alabama Fuel & Iron Co., and a member of the State Board of Examiners, died recently of heart failure. Mr. Hand was well known in mining circles and was a very efficient executive, having been connected with a number of the coal companies in the district prior to going with the Fuel & Iron Co. about a year ago. He was 49 years of age.

W. C. Rogers, 75 years of age, and for thirty years prominently identified with Cincinnati's coal trade, died recently at the home of his daughter in Oakland, Cal. He retired from active business about two years ago. In 1895 he organized the Rogers Coal and Coke Co., and later was connected with the Consolidation Coal Co., and then as manager of the Reliance Coal Co. He was elected to the Ohio Legislature in 1892 and served two terms.

C. A. Meyeratkin, one of the directors of the Hignite Coal Mining Co., died at his home in Covington suddenly. He was also one of the leading politicians of Northern Kentucky.

Association Activities

Hazard Coal Operators' Association

The semi-annual meeting of the Hazard Coal Operators' Association was held in Lexington, Thursday, July 21. Reports were received from the traffic manager and committees in regard to the rates imposed by the L. & N. to cities with river competition. Matters pertaining to wages being paid to the miners in the Appalachia and the Hazard fields were also under discussion and plans made for meeting this question decisively.

Illinois and Wisconsin Coal Dealers' Association

The Illinois and Wisconsin Coal Dealers' Association met for their annual convention at the Hotel La Salle, Chicago. Speakers on the program were: Chas. S. Dodge, treasurer of the association; Chas. H. Markham, president of the Illinois Central R.R., and O. W. Timm, of Plymouth, Wis., who is president of the association. The meeting was very well attended and was a decided success.

Coming Meetings

The Huntington Coal and Industrial Exposition will be held in the Chamber of Commerce Building, Huntington, W. Va., Sept. 19 to 24 incl. Chairman of committee, Thomas A. Palmer, Huntington Chamber of Commerce, Huntington.

American Institute of Mining and Metallurgical Engineers will meet at Wilkes-Barre, Pa., Sept. 12 to 17. Secretary F. F. Sharpless, 29 West 39th St., New York City.

National Association of Cost Accountants will hold its annual convention at Cleveland, Ohio, Sept. 14, 15 and 16. Secretary, S. C. McLeod, 130 West 42d St., New York.

The American Mining Congress and National Exposition of Mines and Mining Equipment. The twenty-fourth annual convention on Oct. 17 to 22 at the Coliseum, Chicago, Ill. Assistant secretary, John T. Burns, Congress Hotel, Chicago, Ill.

The West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers will hold its annual meeting at Huntington, W. Va., on Sept. 20 to 23. Secretary-treasurer, Herbert Smith, Huntington, W. Va.

New York State Coal Merchants' Association, Inc. will hold its annual convention at Richfield Springs, N. Y., on Sept. 8, 9 and 10. Executive secretary, G. W. F. Woodside, 250 Arkay Bldg., Albany, N. Y.

Canadian Institute of Mining and Metallurgy will hold its annual Western meeting at Edmonton, Alberta, Canada, Sept. 14, 15 and 16. Convention secretary, T. B. Williams, 10,610 83d Ave., Edmonton, Canada.

American Manufacturers Export Association will hold its twelfth annual convention at the Waldorf-Astoria, New York City, Oct. 5 and 6. Secretary A. W. Willmann, 160 Broadway, New York City.

National Safety Council will hold its annual congress at the State House, Boston, Mass., Sept. 26 to Sept. 30 inclusive Secretary, S. J. Williams, Chicago, Ill.

The Coal Mining Institute of America will hold its annual meeting at Pittsburgh, Pa., Dec 7, 8, and 9. Secretary, H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

An Industrial Relations Conference for all industries in the State of Pennsylvania has been arranged for Oct. 24 to 27 at Harrisburg, Pa., by the Commissioner of Labor and Industry, C. B. Connelly.

The sixth annual convention of the **National Association of Purchasing Agents** will be held Oct. 10-13 at Indianapolis, Ind.

International First-Aid and Mine Rescue Meet. Sixth annual event will be held at St. Louis, Mo., Sept. 1, 2 and 3, under the auspices of the U. S. Bureau of Mines and the Red Cross.